# COMMERCIAL CAR JOURNAL

*with which is combined Operation & Maintenance*

Reg. U. S. Pat. Off.

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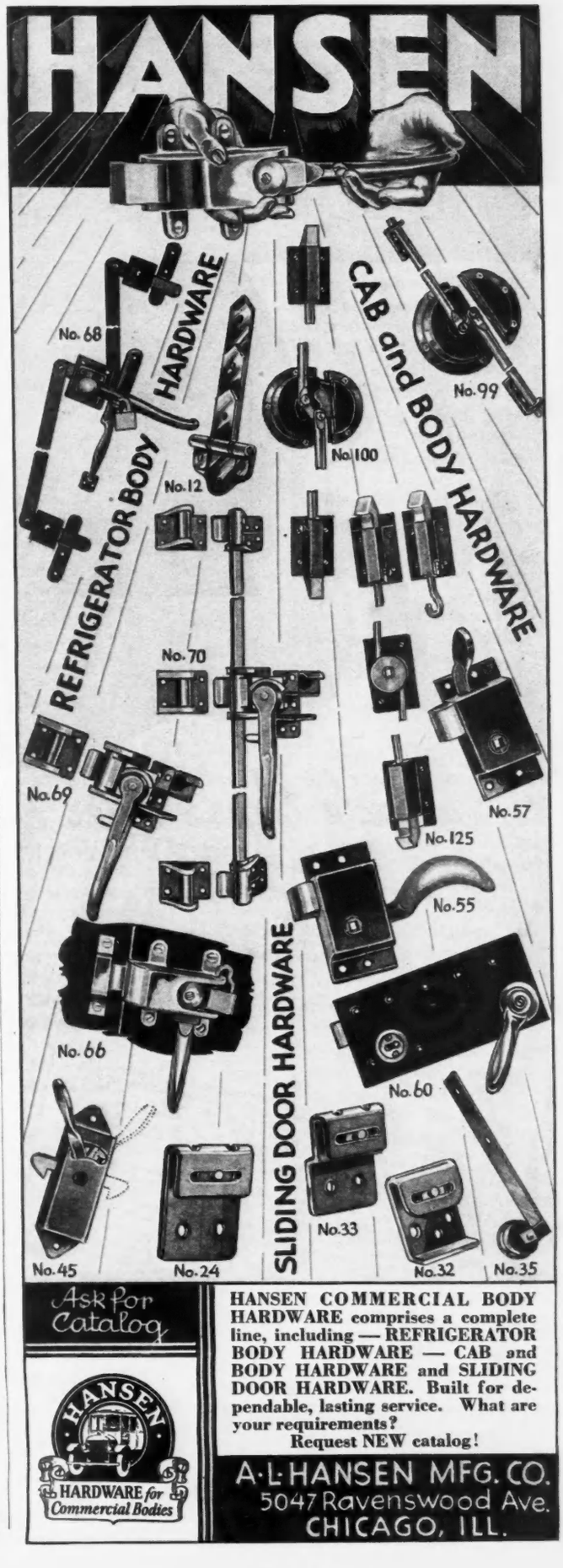


# 4,000 POUNDS LESS
## BODY AND CHASSIS WEIGHT

## *made these tires run* 80,000 *miles*

STELLER TRANSPORTATION CO.
516 Tenth Avenue North
MINNEAPOLIS, MINNESOTA

August 27, 1934

Aluminum Company of America,
1345 Northwestern Bank Bldg.,
Minneapolis, Minnesota

Gentlemen:

We are pleased to state that our 25 ft. aluminum semi-trailer unit purchased from Eckland Brothers Company of this city two years ago has given us excellent service. We believe this semi-trailer was one of the first units in the Northwest to utilize an aluminum chassis built integral with the body. It is approximately 4,000 lbs. lighter than former type equipment of similar strength and capacity.

To date it has travelled over 95,000 miles. We have had no painting or maintenance expense other than minor panel repairs caused by accident. Incidentally, the body is lettered directly on the aluminum which saved us painting costs. The original tires were used intact up to 80,000 miles and three of them are still on.

This experience together with performance of our two smaller aluminum bodies has convinced us that properly constructed aluminum equipment is a good investment.

Yours very truly,
STELLER TRANSPORTATION CO.
Roy E. Steller
President

● As a matter of fact, three of the original tires were still on, after 95,000 miles!

These are figures that speak volumes for the advantages to be gained by specifying Alcoa Aluminum for Truck Body and Chassis construction. Many operators utilize all the great weight-saving of Alcoa Aluminum to add profitable pay-load to be carried every trip. When extra weight of pay-load is not desired, the saving in tire costs, plus the savings in gas and oil consumption, that come from hauling less dead-weight, are all the reason any operator can want for specifying light, strong Alcoa Aluminum.

May we help your builder figure on your next job? Address ALUMINUM COMPANY OF AMERICA, 1839 Gulf Building, Pittsburgh, Pennsylvania.

ALCOA

# ALCOA · ALUMINUM

Vol. XLVIII No. 4 COMMERCIAL CAR JOURNAL DECEMBER, 1934

# The Overload

**Odd Items and Comments—Not All Odd—Garaged in This Spot to Entertain, Amuse and/or Amaze You**

## A She Salesman

WHEN a woman breaks into any part of the truck business and makes a go of it, that's news. So we give you Miss Olive Parsons, of Kalamazoo, Mich. She's a saleswoman and sells Ford cars and trucks. She evidently recognizes that it's a man's job because she does it a man's way. She sells as many trucks as

passenger cars because she takes the trouble to convince operators. Once she sold 82 tons of coal in a few days' time to convince a prospect that she had the right answer to his problem. The sale took. She takes particular pride in what she calls her "personal delivery plan." She delivers personally every unit that she sells. There are times when the plan is kind of tough. Sister Parsons' worst temptation came when she had to deliver a tractor to a customer 40 miles away. But she chugged out into the wilderness and put the devil behind her.

## Tale of a Tail Light

IT isn't only Mrs. O'Leary's cow that can smash a lantern and start a disastrous blaze. There's the experience of a truck operator whose name we needn't mention. It seems the tail light went blooey, and for want of a better substitute the driver hung a lighted coal-oil lantern on the tail gate. The idea would have been a good one if the truck hadn't

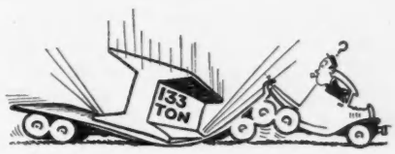
gone over a bad bump. But it did, and the lantern broke and set the truck on fire. The moral, of course, is that it pays to carry a spare bulb. Or does it? You know your drivers better than we do.

## Propane Preferred

OUR unofficial observer at the American Petroleum Institute meeting in Dallas returned with a report that the petroleum industry seems determined to keep its nose tilted and overlook Diesel developments. Furnishing diesel fuel, it seems, doesn't tie-in with the industry's idea of ideal economics. Petroleum interests would prefer the truck industry to make use of a by-product of gasoline manufacture. Its name is propane—and it appears that the stock of propane available is more or less a pain in the petroleum pocketbook because the supply is far greater than the demand. That's why petroleum interests would like the automotive industry to start from scratch and build a powerplant intended exclusively for propane. Propane, as you probably know, is the nerts when it comes to power producing. Just the thing for trucks, they say.

## A Trailer "Takes It"

HOW'D you like a load of 133 tons to fall suddenly on one of your trailers? Roger Bros. Corp. of Albion, Pa., had that experience and the trailer lives to be a witness to the tale. The trailer that took the punishment is a 35-ton unit. While transferring a 133-ton girder from a railroad car to the trailer, the crane operator (maybe he doesn't like trucks) let the girder slip and it fell four feet, landing on the trailer with—well, call it a thud, a bang or a crash, or all three and it's still an understatement. No serious damage was done. The trailer continues to operate, which is as much a surprise




to Roger Bros. as it is to Timken, whose bearings can "take it."

## Add Miracles

MIRACLES still happen. One that truck drivers will appreciate is recorded in the weekly bulletin issued to employees by the Adley Express, Inc., New Haven, Conn., and points south, to wit: "Slim Ellis fainted last week when he found his gloves. It seems he left them on his truck Friday night, and when he came back Sunday they were still there."

## A Pedestrian Is—

THIS same bulletin contains a definition that deserves to be passed on. Stop us if you've heard it—if you can: "A pedestrian is a man whose wife has learned to drive the car."

A MERRY CHRISTMAS AND A HAPPY NEW YEAR

# THE OVERLOAD

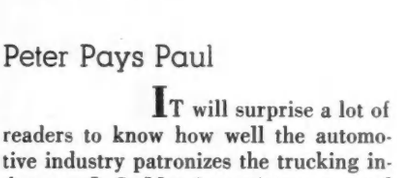
(Continued from Page 11)

## 10,20 Hoity-Toity

THE light winter oils—10W and 20W—won a blue ribbon in a 5000-mile test run. The car was driven by the famous Louis Chevrolet under the sponsorship of the Sun Oil Co. A variety of operating conditions was encountered on the route which covered Western Pennsylvania, Detroit, Indianapolis, Miami, Fla., and back. The car was a Chevrolet; the oil was Sunoco 20W. Starting with 5.15 quarts, 1.47 quarts remained at the end of the run. The consumption of 3.68 quarts spells an economy of 1360 miles per quart. Some economy, eh boss? When the engine was torn down it showed less than normal wear. The average speed for the run was 42 m.p.h. Remarkable, Watson, eh wot?

## Peter Pays Paul

IT will surprise a lot of readers to know how well the automotive industry patronizes the trucking industry. J. S. Marvin, assistant general manager of the Automotive Manufacturers Association (the NACC, if the change hasn't yet caught up with you) is authority for the statement that the



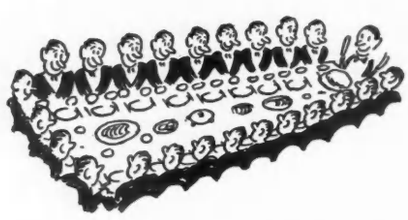

automobile industry is "utilizing the for-hire trucks for short hauls and services in and around factories to the extent of $25,000,000 annually and giving employment to thousands of men." That gives the industry the right to be on the users' side of all questions affecting highway transportation.

## Super-Charging Next

ON the way back our observer helped a well-known truck engineer to smoke up a pullman washroom. Just before they lost sight of each other in the fog, the engineer observed that, in his opinion, the next development in gasoline engines should be super-charging. Put that in your pipe and see if you can smoke it.

## One Big Family

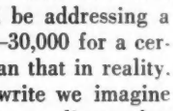
IT ought to be a source of pride to fleet readers to know that they are part of a very large and influential family. It's a family of 25,000 fleets operating five or more trucks. The family is really much larger than that because by the time this publication is routed among various men in each of the 25,000 fleets receiving it, the reader total is so multiplied that only a reckless statistician would try to compute it. Then, of course, there are the 5000 additional readers who comprise the so-called truck trade. We



tell you all this so that you may be encouraged to express your views to this publication on all truck transportation matters. You'll know now that when you write you'll be addressing a tremendous audience—30,000 for a certainty—many more than that in reality. Personally when we write we imagine ourselves addressing an audience that darn near fills the Yankee Stadium—and that seats around 80,000, doesn't it? Let readers hear from you in '35.

## Page Rube Goldberg

FOR inventions here's one that takes some kind of cake—maybe just a crumb. It's a signaling device in which the inventor has tried to humanize the inanimate semaphore. It consists of a rubber arm and glove which hangs limply at the side of the body. It is connected with a small engine-driven air compressor with a push-button control valve between. When the driver wants to signal a



turn he presses the button, which opens the valve and causes the air to inflate the arm. Our own contribution to this remarkable invention is that to instill the fear of vengeance in following motorists the arm be patterned after the arm of that toughest of tough guys, Popeye the Sailor. Put a can of spinach in the hand and, boy, you've got something.

## Shades of Paris

BOOTLEGGING art, as Parisian visitors can testify, has long been a profitable enterprise to bootlegging Frenchmen. The practice has found its way to Detroit, but instead of selling "feelthy pictures" the bootleggers are asking 50 cents for a picture of the 1935 Ford which is said to be snitched from advertising literature. We don't go in for bootleg, but if you want bonded stuff about the 1935 Ford truck you'll find it on page 36.

## Returns From CVOting

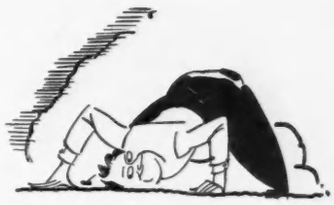
WINTER'S whistling winds again bring up the subjects of safety and light winter oils. Safety is a topic that's always foremost in the monthly discussions of the Commercial Vehicle Operators of New York. Chains, brakes, heaters, mirrors and flares held the floor at the last meeting. Chains were voted splendid aids to traction with snow on the roads. Their anti-skidding characteristics were minimized. The vote on brakes showed that a majority favored vacuum booster-operated brakes on trucks of less than five tons' capacity and air brakes on the larger vehicles. While admitting that there were localities where extreme cold made cab heaters a necessity, the operators agreed that in climate such as New York's heaters were not conducive to driver efficiency. There was an unanimous vote in favor of two rear-view mirrors (the round type) on trucks with closed bodies. The mirror bracket should be short to minimize the effects of vibration, and should end in a ball-and-socket joint with cap-screw lock. The Free State of Maryland was given a bouquet of scallions for officially approving road flares that burn only 10 minutes.

## Santa "Claws"

COORDINATOR Eastman is burning midnight oil on his Christmas present for Congress. It's the truck regulatory bill, children.

# Ears to the Ground

**Giving You Information Some of Which is Inside, Some Advance, and Some Just Unusual**



### *A Seasonal Fancy*

About this time every year the industry's fancy seriously turns to thoughts of impending announcements by truck producers. Passenger car announcements are late coming through, but we understand the truck announcements will be even later. Even so there are some things that can be told a bit in advance of the formal tootings.

### *Figuring Ford*

Ford is the only one of the major producers who has released details of the truck before the passenger car. These details will be found on pages 36 and 37. You will note that the current V-8 engine with a few changes is retained in the truck.

### *Chatting About Chevvy*

We can't tell you all that the Chevrolet truck will have in the way of changes but you can get some idea from the following changes which are destined for the passenger car: Combination splash and pressure-jet lubrication for con-rod bearings, the splash dippers being used for slow speeds; L-shaped segments in clutch plate for smoother operation and to permit use of facings with higher coefficient of friction; chain connection between clutch pedal arm and throwout lever; new method of anchoring reverse brake shoe; Master engine used in the Standard series as well.

### *New One From Newcomer*

Independent springing for the front end of one line of 1-ton trucks may not be ready in time for the show season. The latest development in this respect is that the job will be built by a company not at present active in the truck market.

### *From Sunny California*

There's also something new under the famous California sun. Operator 13 tips us that the Shepard-Thomanson Co., maker of brake rivetting and grinding machines, has just began production of a new machine. This machine grinds down brake lining on trucks while the wheel remains on the axle—an entirely new principle, according to its inventor. The idea puzzles this department's technical advisory board and so we're on Mr. Thomanson's trail for detailed dope.

### *Tire Size Calculator*

Here you see pictured something new. It's a tire calculator for 1½-ton trucks. All you do is pick out the payload you intend carrying and the calculator will give you the correct tire size

for 100 per cent normal service expectancy, and also tell you how much you'll suffer if you overload. It's yours for the asking. See the Free offers on this page.

### *New One From Old Timer*

General Motors Truck is expected to make its announcements about the middle of January. Look for something unusual in a standard production truck on one of the lighter models.

### *That Two-Speed Axle*

Don't overlook getting all the details on that two-speed axle which was first mentioned in this department as far back as August. You'll find them on page 40.

## FREE!

***Use the Convenient Postcard on Page 52***

**Note the reference letters below and simply check the corresponding letters on the postcard.**

**E—Hand Book of Useful Brake Information (24 pp., illustrated)**

**F—Tire Calculator (pictured above; helps reduce costs by correctly sizing tires for load carried)**

**G—Piston Ring Size Directory (Covers all truck, car and bus models and stock engines; includes helpful data on servicing engines)**

**H—Hand Book of Governors**

**I—Body Hardware Catalog**

***Special Offers:***

**For additional Special Offers A, B, C and D see the Free Money Maker insert on page 52.**

### *Lighter, Priced Right and Nifty*

Another of the large exclusive truck manufacturers is completing field tests with a 1½-ton model that will sell at a price that sets a new low for this producer.

### *South Bend Secrecy*

The secrecy surrounding some of the things planned for the truck line by Studebaker would make even a Winchell itch to get a peep behind the scenes. We began itching when one of our regular readers advised us to "put our ears to the ground at South Bend and keep them pinned there because big things are stirring." He simply poured salt on our curiosity when he said that one of the big things planned had been postponed until sometime in the good old summertime. Implying, of course, that they've got a lot of big things up their sleeves and can well afford to postpone one of them. Swell!

### *Double-Duty Ring*

A new ring for the middle groove of a piston will make its appearance soon after the first of the year. It is an oil-control ring but not of the channel type. It not only helps the lower ring with its oil problem but also abets the compression rings above. The idea for it was born of diesel practice.

### *Diesel Not Yet Due*

Sorry we can't tell you any more about that new diesel mentioned for the first time last month. Tests are continuing, but we've been told not to expect anything for another three months.

### *The Perfect Fuel*

We've got to take a deep breath before telling you about this one. Just a moment. There! . . . Tri-methyl-ise butylmethane, a pure hydrocarbon developed in 1927 as the "perfect fuel," and since used as a yardstick to measure anti-knock properties of gasoline, is being produced commercially by an oil company and will soon be available for compounding in aviation fuel. It will enable the aviation industry to expand the power and speed of its ships without danger of detonation, and may open new possibilities in the acceleration, speed and power of automobiles hitherto untouched by even the highest compression engines.

HERE'S a fleet safety case where the terror of the neighborhood became the docile and envied holder of the National Safety Council's safety award for large fleets in the coal and ice division. One hundred and twenty accidents in a year with 30 trucks made this fleet a hazard. Cutting this record to six accidents in a year made this same fleet a safety award winner. This story tells how it was done.

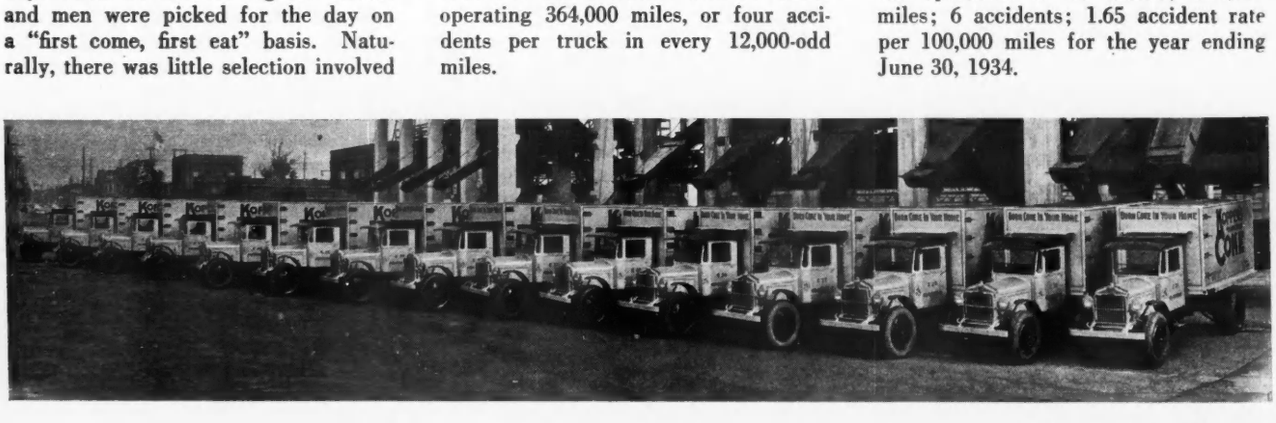
# We Led With a Safety Program, Not Our Radiators

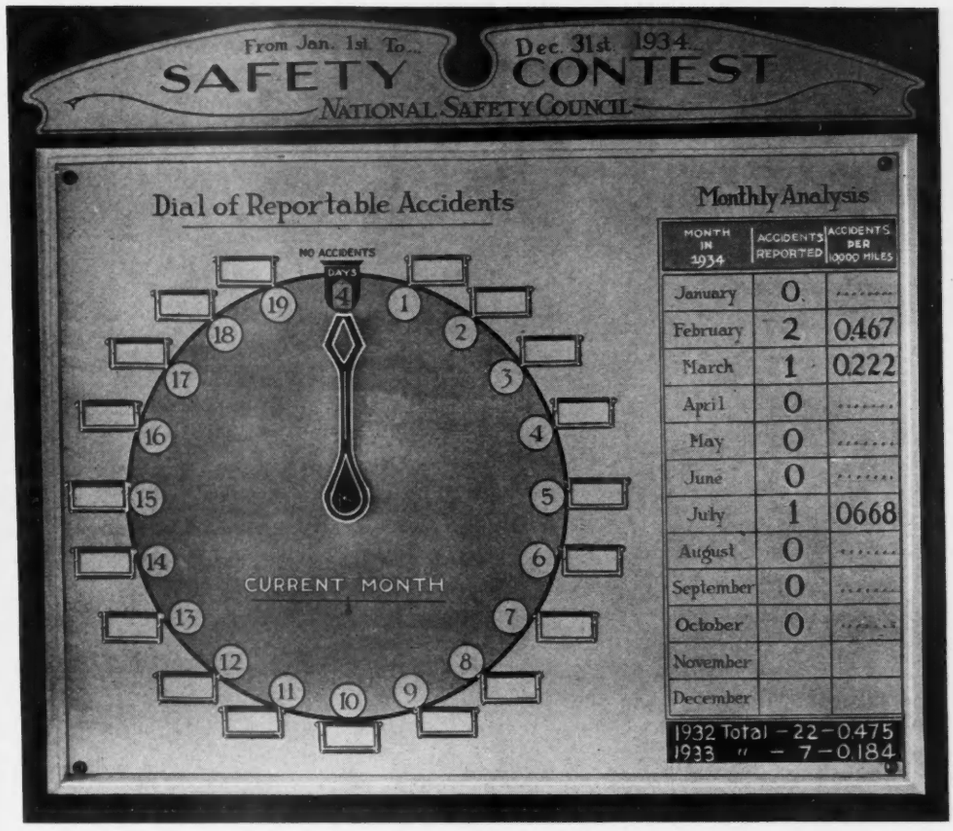
## .... And Scored a 96 Per Cent Accident Reduction Record With a 10 Point Safety Plan for a Near-Perfect Knock-Out

**By R. T. ELLIOTT**
**Transportation Superintendent,**
**Philadelphia Coke Co., Philadelphia, Pa.**

IN 1930 our trucks were the terror of the neighborhood. That was in the days when we had no regular drivers and men were picked for the day on a "first come, first eat" basis. Naturally, there was little selection involved in picking our drivers and even less safety. The net result of this system in 1930 was 120 accidents with 30 trucks operating 364,000 miles, or four accidents per truck in every 12,000-odd miles.

That seemed to be about the best that could be done in establishing an accident record. Tired of this somewhat dubious honor we decided it was about time to swing the other way. Our fleet and drivers underwent a complete overhauling. Although the change was gradual, the results were stupendous and our sweet reward came this year with the winning of the National Safety Council's safety award in the coal and ice division. The award was based on the operation of 30 trucks; 364,623 miles; 6 accidents; 1.65 accident rate per 100,000 miles for the year ending June 30, 1934.






***Prominent in the safety contest was this bulletin board, especially designed by Mr. Elliott and his staff, which gives a complete record of the progress of the campaign and history of the accidents at a glance. The dial-face gives a month by month account of the contest which is recorded on the chart at the right. As a ready means for keeping a 12-month analysis as well as a means for keeping men posted on their progress, this board serves a valuable function. See No. 7 for details.***

***Left—Outstanding no-accident drivers are (L to R) William Price whose no-accident record dates from 11/30/31; Stanley Kull, 10/20/31; John O'Neill, 3/16/31***

***R. T. Elliott . . he scored with a safety***

Winning this reward proves what can be done with a safety program by any fleet. So far this year we have had five accidents covering the first 11 months. These five accidents tell a different story from our 1930 record. Over the five-year period the actual reduction in accidents is 96 per cent—not far from a perfect record of accident reduction. Here is a record of those accidents and of accident reduction for the past five years:

| Year | Number Accidents | Mileage | % Decrease |
|---|---|---|---|
| 1930 | 120 | 364,914 | 41 |
| 1931 | 71 | 454,124 | 69 |
| 1932 | 22 | 462,886 | 70 |
| 1933 | 7* | 380,216 | 34* |
| 1934 | 5 | incomplete | |

*11 months.

One result of this excellent showing by our fleet is the reduced 1935 insurance premium which will be approximately 45 per cent less than that paid in 1930. Our record may be attributed in part to general economic conditions which resulted in drivers attaching more value to their jobs, and to recognition by the management of the Philadelphia Coke Co., that numerous accidents were affecting the good-will of the public toward the company.

Our safety program is specific. It was developed with the intention of improving working conditions and thereby reducing employee turnover; improving the quality of the personnel and creating an interest in safety among its driving employees. There are 10 steps.

**1.** Assignment of drivers and helpers to trucks on a seniority basis.

Selection of drivers is strictly on driving ability. Assignment of drivers to trucks is on a seniority of service basis. Once a driver is selected on his ability, he is kept on the alert by keeping him in line for promotion. This is accomplished by dividing trucks into four classes. They are the 5-ton trucks of which there are 15; 12 of 3-ton; 3 of 6-ton; 2 of 1½-ton capacity, and are listed in the order of their desirability among drivers. As the 5-ton trucks are the most desirable, drivers look forward to being assigned to one someday. As a driver's bonus is based on tonnage, 5-ton trucks are the most desirable, and to be assigned to one is equivalent to a promotion—provided the driver has a good safety record.

**2.** Driver Selection.

We never hire a man as a driver. All men are taken on as helpers. To get a job with us, a man must pass my personal inspection in an interview. Then he files his application which we check thoroughly. If approved, he is given a physical examination. If he passes these tests he is hired as a helper.

(Turn to Page 48, Please)

# Selected Equipment

THIS is a big job you have given me—to describe the equipment of the Consolidated Freight Lines, which operates in Washington, Oregon, Idaho, Montana, California and Nevada, and the reasons why each type of equipment was selected for its particular job. The advantages and disadvantages of each type of equipment as found by our company would not necessarily apply to other operations because their conditions may be entirely different.

Consolidated has a variety of equipment. When we feel that it is economical to eliminate any one type we do so without ceremony. However, from where we sit now it looks like we are going to have several kinds of equipment with us for some time to come. There are four factors that vitally affect the types of equipment necessary to economical transportation. They are:

Number and size of routes covered
Type of country covered
Class of merchandise handled
Laws of the states operated in

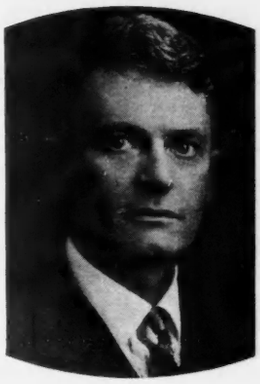
# Curves Cost Downward

## In Choice of Truck Types Fleets Must Be Governed By Size of Routes, Terrain Covered, Kinds of Loads and State Laws

**MOUNTAINS and deserts, paved highways and ungraded terrain of the Northwest are some of the conditions that the 400-odd pieces of equipment operated by the Consolidated Freight Lines have to meet. Picking the right type of equipment for the job has cut costs, speeded schedules and solved both the muddy and rocky problems of operation. This story tells which type of equipment does the job most economically.**

**By J. L. S. SNEAD**

**Superintendent, Portland District Consolidated Freight Lines, Portland, Oregon**



*J. L. S. Snead . . each piece of equipment has its particular advantages . .*

Most important is the equipment that does the inter-city work. The bulk of this hauling is done by four-wheel trucks pulling four-wheel trailers. This combination handles 12 tons of freight. Most of our operations are through Oregon, which has a 49,000-lb. gross load limit. The trucks weigh 14,000 lbs. and the trailers weigh 10,000. The trucks are heavy because we are using big-high-powered engines with heavy transmissions and differentials. These high-powered units are necessary because most of our hauls are long and we give overnight service between points as much as 375 miles apart.

The trucks are equipped with 16-ft. van bodies and the trailers have 20-ft. bodies of the same type. This gives us a body length of 36 ft. The bodies are 8 ft. wide and 6 ft. 6 in. high. This body capacity permits us to load 5 tons on the truck and 7 tons on the trailer. The brakes on the rear wheels of the trucks and on the front and rear wheels of the trailers are air actuated. Both truck and trailer use the same size tires, which is either 22x9.75 or 20x9.75. We find that the former size gives more mileage. The truck is designed to carry 17,000 lbs. on the rear axle and 8000 lbs. on the front. When new tires are put in service they are installed on the front wheels or on the driving wheels of the truck for the first 15,000 to 20,000 miles of their life. Then they are removed—recapped if necessary—and placed on the trailer wheels. The brake shoes, wheel bearings, etc., used in the trailers are interchangeable with those used on the trucks.

Most of the truck bodies are insulated with about 2 in. of balsam wool and are provided with hot water pipes for heating in winter. In summer they are cooled by the use of brine tanks. Perishable freight is carried in the trucks as the trailers have no insulation.

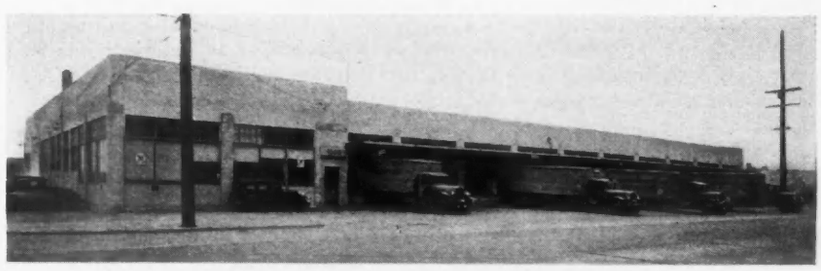
THE advantages of the four-wheel truck and four-wheel trailer combination in our service are:

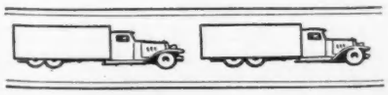
They operate well over on their own side of the road on narrow crooked roads.

They provide adequate body space.

Upon occasion the trailer may be dropped at an intermediate point while the truck proceeds to a more distant point, thus serving two points without delay and at a minimum of expense.

*One of the modern Consolidated Freight terminals in Seattle, Wash.*





## SELECTED EQUIPMENT CURVES COSTS DOWNWARD

The disadvantages of this type of equipment when compared to the six-wheel truck of equal capacity are:

Greater dead weight compared to the amount of pay-load.

There are more tires on the ground than there are with the six-wheeler.

It is not as controllable on ice and snow.

As compared to the tractor and semi-trailer, the four-wheel truck and the four-wheel trailer combination has greater loading space and better adaptability to narrow curved roads but has the disadvantage of greater dead weight compared to payload.

For our shorter runs, up to 125 miles we are using tandem-axle semi-trailers and tractors of about 2½ tons capacity. These semi-trailers have 24 ft. round-nosed bodies, and the load distribution is such that each of the three rear axles carries about 12,000 lbs. while the front axle carries 6,000 lbs. The weight of the equipment is 16,000 lbs. and the body size permits a normal load of only 10 tons. The gross maximum weight permitted is 42,000 lbs. which gives us a capacity of 13 tons when the freight runs heavy enough to be able to load that much in the body.

THESE units powered with a 90 h.p. engine will not make the time that the four-wheel truck and four-wheel trailer combination having 150 h.p. and 175 h.p. engines will, but the fast schedule is not necessary on the shorter runs. This type of equipment gives us the lowest net cost on the freight hauled, which is due to the high ratio of payload to dead weight. Lower speed of operation contributes to the economy.

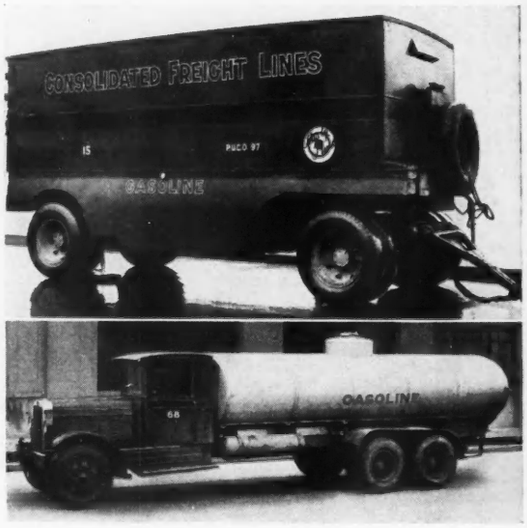
We find that there is little difference in the cost of operating each type of equipment so long as the gross weights are equal. We also find that the greater the gross load the cheaper it is per ton to haul providing the vehicles are properly designed. For that reason we are using vehicles of the largest capacity permitted by the states they operate in.

In the State of Washington there is an allowable gross load of 68,000 lbs. with an allowable overall length of 85 ft. As a result of these limits we are operating six-wheel units with 22-ft. bodies and six-wheel trailers with 24-ft. bodies carrying a gross of 68,000 lbs. and a payload of 17 tons between Seattle and Spokane. In this equipment we have about the same ratio of payload to gross load as we do on the four-wheel truck and four-wheel trailer combinations. The reason this ratio is so low is that the distances are great and the routes mountainous. These conditions force us to use high-powered engines and heavy transmissions and differentials. The cost per ton-mile of the six-wheel truck and six-wheel trailer combinations is slightly less than the four-wheel combinations.

IN the large cities the pickup trucks are frequently called upon to haul 4 tons. For this job we use trucks rated at 2 to 2½ tons. Where loading is slow we use 16 ft. semi-trailers to avoid tying up equipment. These semi-trailers are moved about town by 1½-ton tractors. One tractor can handle as many as three semi-trailers.

For pickup and delivery in the smaller towns, light 1½-ton trucks are used and the mechanical work on these trucks is done by the local truck agency. At small terminals the pickup trucks are used for spotting four-wheel trailers at loading docks, etc., and for this purpose they are equipped with trailer hooks front and rear.

*Top—High-powered six-wheel trucks operate in the state of Washington where laws permit gross loads of 68,000 lb. Bottom—Slow semi-trailer combination used for short hauls*




*Top—Specially designed trailer unit which hauls 2,000 gal. of gasoline in a compartment below the broad stripe line and six tons of freight on return trips in the section above the line. Bottom—Regular gasoline delivery unit*

In such large terminals as Portland, Seattle, Spokane and Boise, we spot and move the trailers around town with Fordson tractors, equipped with pneumatic tires. These tractors have air compressors, and air control valves which makes it possible to operate the trailer brakes as well as lights so we can use them all night.

SOME of our work is specialized and requires special equipment. For hauling new cars we have lengthened light 1½-ton trucks out to a length of 35 ft., which enables us to load two new passenger cars on it. This long truck pulls a four-wheel trailer 28 ft. long with two more passenger cars on it. When the trailer is not in use it is pulled upon the truck by a winch and it is carried instead of being pulled. This same winch is used in the loading of disabled cars. We went to extremes in keeping the weight of this unit down because we felt that 20,000 lbs. was the limit for the engine we were using.

An interesting piece of equipment is our gas tank job. In connection with our freight business we deliver gasoline

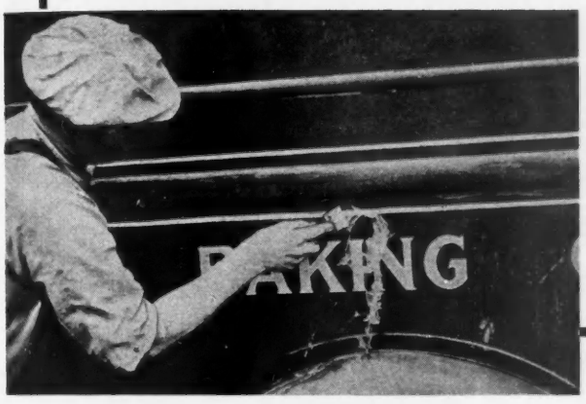
(TURN TO PAGE 55, PLEASE)

*Gottlieb Roll . . . synthetic enamels never fail him*

# General Baking Saves Dough With Synthetic Enamel

## Head of Shop Gives His Own Well-Baked Formulas for Keeping Fleet Painting Costs From Rising High

By GOTTLIEB ROLL
Shop Supt. Wagon Repair Dept.,
General Baking Co., New York



*On a re-surfacing job the old synthetic clear is easily removed by softening with ammonia and may be scraped off without cutting the color coat*

*This synthetic enamel job in green finished over lacquer is typical of the size of truck finished at a cost of $85*

"A GOOD primer, a well prepared surface and a dry, moderate temperature are the three prime requisites for doing a good synthetic enamel job that won't crack or peel; that will stand up for two years under normal conditions; that will then take another coat of color and clear, and hold up for another two years at an average cost of $85 in all—that has been my experience!"

I HAVE never had a synthetic enamel job crack or peel. At present I am taking care of about 350 vehicles, refinishing an average of 16 a month. I have been in the painting business for 30 years and have been using synthetics for quite some time. In my experience I have not known of an easier method for refinishing, nor a cheaper one than that offered by the use of synthetic enamels.

If cracking or peel does occur, the fault may be the painter's who does not make sure that his primer is absolutely dry before applying more material over the job, or in applying the mist coat of color and letting it set more than ½ hour and then applying the final coat.

The fault may also be due to inferior primers. A good primer should always be used. Personally, I use a red oxide primer over everything, wood, composition, metal, etc., apply it with a brush and get excellent results. My jobs run 18 to 20 months, come into the shop for a refinish with clear synthetic only, and are good for another two years. My methods are sure and simple.

Refinishing jobs are of three kinds. Those that require a strip-down, those that receive a new coat over the old finish, and those that receive a sanding and a coat of clear over the old job. In all three types of jobs the finish stays on!

For strip-down jobs (on metal only) we use a regular paint remover. It is applied with a brush and allowed to soak for a while. Then a second coat is applied and after the old surface has softened, the paint is scraped off with a wide putty knife. Shops in a position to use a cold water or steam spray can do the job in about two hours. Without facilities to use other than the regular paint remover, the job takes us about four hours. A good wash is absolutely necessary or the continued action of the chemical may cause the new paint job to fail.

IN building-up the finish we first brush on a coat of red oxide primer. This should be done in a temperature of 72

(TURN TO PAGE 63, PLEASE)

## EDITOR'S NOTE

**SOME philosopher spoke wisely when he said that men may desert personalities but not principles.**

**Fortunate, therefore, is the trucking industry today in having at its head a personality that attracts men and holds their respect and admiration. It's not only the man that they see, but his principles . . . and those principles are the guiding stars of every thinking truckman.**

**Built around sound principles and held together by the bond of a tireless, dauntless and magnetic personality, the national association of truck organizations now presents a united front of the industry which will safeguard truck transportation against its common enemies.**

STEP into the Washington headquarters of the American Trucking Associations, Inc., any day of the week and you walk in on a beehive of activity. Tread your way to the left among nimble-fingered stenographers and clickety-clacketing typewriters and hustling men, and your steps will lead to a room whose carpet is being worn bare by the feet of men who are responsible for the trucking industry's greatness.

This room is the Mecca of truckmen. They have come from all over the United States—some of them with chips on their shoulders. But all of them have left with a new and deep admiration for the sterling qualities of the man whose office it is.

There he is, over there, behind the desk and almost hidden by it. Yes, the little man with rolled up shirt-sleeves. That mean's he's stripped for action and action to Ted V. Rodgers means exhaustion to his fellow-workers.

Yes, that's *the* Ted V. Rodgers, president of the American Trucking Associations, Inc., Chairman of the Trucking Code Authority. That makes him the trucking industry's head man, an honor

***Left—Ted Rodgers, magnetizing Coordinator Eastman and Deputy Code Administrator Clark during the Chicago ATA convention***

# The Head Man of the Trucking Industry

**A biographical sketch of Ted V. Rodgers, who started life as a coal cracker, worked for a railroad, sold cars, trucks, parts and tires (and still does), who operates a fleet of 39 trucks and who now leads the trucking industry.**

To describe the humble beginnings of Abe Lincoln, the term "rail-splitter" was coined. If you want a term like that in Ted Rodgers' case it's "coal cracker."

The term is sufficiently descriptive to prove that he was not born with the proverbial silver spoon in his mouth. If he came into this world with any particular inheritance, it was probably with an iron pick in his hand.

Ted's earliest recollections (he doesn't mind the familiarity) are associated with the hard coal region of Pennsylvania.

It was at the tender age of 11, when most boys are still being coddled by their mothers, that Ted went to work in the mines. He had no difficulty in navigating the cavernous depths as he was barely more than four feet high and rarely had to duck the ceiling beams. Shortness of stature, however, presented another problem. Boots were regulation equipment. They

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which he did not seek, but which certainly sought him.

He's a Little Napoleon—in every respect but one. He is not motivated by personal ambition. His sole ambition is to see that the trucking industry and all of the men in it do not suffer at the hands of the industry's enemies. Let it be understood that that includes those within the industry itself whose motives are subject to suspicion.

*You'll have no trouble recognizing Mr. and Mrs. Rodgers. The five reasons that will always keep Ted Rodgers straight are, left to right, Betty, Teddy Jr., Patsy Ann, Peggy and Kitzie.*

# What Do You Know

**A MOST important thing for fleet operators to remember is that different gasolines really differ. Not just in color or in price, but in these important essentials—the work they can do for you, and their effect on engine life. Different engines get**

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GASOLINE cost is a major item of expense and the characteristics of the gasoline used by the truck operator affects costs very considerably as to miles per gallon, maintenance and the economic life of the engine. By understanding exact gasoline requirements, taking into consideration the type and condition of equipment and the character of the operation, a satisfactory balance can be obtained between gasoline cost, gasoline economy, maintenance and engine life.

For many years gasoline has been one of the most variable products on the market. Commercial engine builders have therefore been forced to build engines which would operate reasonably well on the poorest grades of gasoline and therefore such engines could not operate at their best on better grades. During the past few years much has been done to standardize gasolines but not until about a year ago was regular gasoline standardized to the point where engine builders had a definite fuel to which they could build their engines.

As most of the engines in operation today were built before this new gasoline standard was established and as originally sent out from the factory, they have compromise adjustments which will permit them to run fairly well on almost any fuel. In order to get the most power and greatest economy from such engines an understanding of gasoline requirements is necessary in order to select the most satisfactory fuel. Having selected this fuel it is probable that certain adjustments can be made to the engines which will further increase their economy and performance.

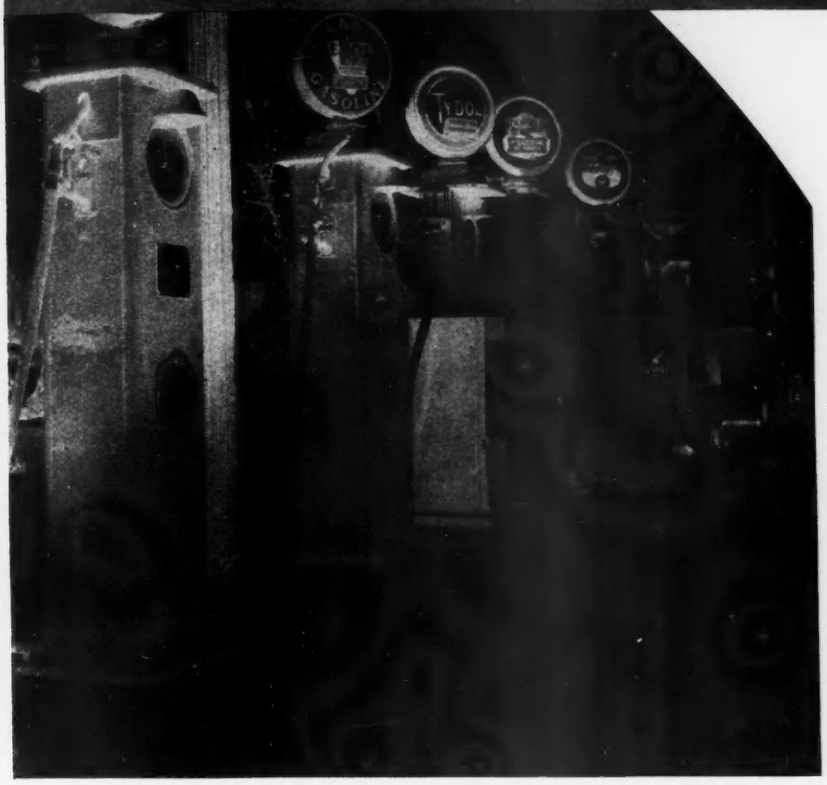
Practically all commercial gasolines are blended, that is, they are composed of two or more types of gasoline usually "straight run" and "cracked" gasolines. Sometimes a small amount of "natural" gasoline is added, particularly in the winter time to improve starting qualities. In general the characteristics of commercial gasolines are quite similar and it is therefore difficult for the operator to intelligently choose which is best suited for his purpose.

WHEN choosing fuel, the operator should consider that in regular gasolines the proportion of light and heavy constituents varies considerably and with it power production. Heavy-duty equipment which operates steadily during the day, maintaining even engine temperatures, will operate very satisfactorily on a fairly heavy gasoline and give good power and gasoline economy. If the equipment is intermittently operated and engines are stopped for comparatively long periods, a somewhat lighter gasoline may be required to insure good starting and warming up. In light delivery equipment which is similar to passenger car service, a still lighter gasoline may be desirable. All of these characteristics are available from reputable marketers but different brands differ appreciably in the content of light and heavy gasolines.

AN automotive engine is a machine for converting energy stored in the gasoline into usable power. Unfortunately the engine is not very efficient and converts less than 25 per cent of the available energy of the fuel into power. The remaining heat must pass out through the exhaust pipe, be dissipated by the cooling system, by radiation, etc., or through moving parts. Inasmuch as the engine is an energy converter, it is desirable that the fuel have the greatest possible heat content. Practically all available commercial fuels contain approximately the same number of British Thermal Units per gallon. It is true that the heavier gasolines contain a

PLUS

# About Gasolines?



**different results with different gasolines. Do you know if the gasoline you are now using is the one that will enable you to get the most out of your equipment? This story tells what gasoline characteristics are best suited for certain kinds of work.**

somewhat greater number of heat units than do the lighter ones. However, commercial engines are not primarily designed to use these very heavy fuels and are therefore usually able to get more power from the regular gasolines because their induction systems are better able to handle such fuel.

THE essential characteristics of a gasoline other than heat content are: volatility; freedom from impurities; tendency to detonate.

Volatility is a measure of the ease with which a gasoline vaporizes in the carburetor and intake manifold and in general the characteristics of reputable regular gasolines are quite satisfactory in this respect. Such gasolines have an initial boiling point of 85 to 100 deg. Fahr. and an end point of from 375 to 425 deg. Fahr. The sulphur content of any gasoline should not exceed one-tenth of 1 per cent. It is a simple chemical test to determine the sulphur content of a gasoline and high sulphur content is rarely found except in some off-grade, distress and similar cheap products. If the sulphur content is in excess of one-tenth of 1 per cent, acid compounds may be formed in the engine and they will corrode its parts causing high maintenance costs and short engine life.

The matter of gum is more serious because while it is possible to determine the amount of gum in a gasoline at a given time it is very difficult to determine the amount of gum which may form in the gasoline and be present at some future date. A gasoline which, at the refinery, shows a safe gum content may on storage for any appreciable time, contain enough gum to be harmful to an engine. High gum content usually results in the formation of gummy compounds in the gasoline lines, carburetor and intake manifold. The gum will also deposit on intake valves in the form of a sticky compound or hard carbon. It will build up in sufficient quantities to retard or actually prevent the closing of the valve by depositing on the stem or in the guide. Gasolines which contain a large percentage of highly cracked gasoline are usually the ones which cause most trouble from gum.

THE most important characteristic of gasoline is its tendency to detonate or knock because this characteristic definitely controls the amount of power which can be obtained from a given engine. The volumetric compression ratio which can be used in an engine is dependent upon the anti-knock quality of the gasoline and in turn the power output of the engine is determined by its compression ratio. Stated more simply, the more we can compress a charge of gasoline and air in the cylinder before it is fired, the greater the amount of work which it will do when ignited. But when we compress the charge more than a certain amount, detonation or knocking will occur unless the gasoline has high anti-knock value. This knocking is accompanied by loss of power, reduced fuel economy and overheating of the engine.

A little more than a year ago most of the refiners began producing gasolines of higher anti-knock value. This standardization of quality providing regular gasoline of 68-70 octane number for the first time gave the engine builders a standard to which they could design and build. All of the manufacturers of both passenger cars and commercial equipment were quick to take advantage of the new fuel, by increasing compression ratios and in some cases also improving volumetric efficiency. This increased the power and improved the fuel economy of engine models without increasing their size.

# Ideas of Wily Shopmen

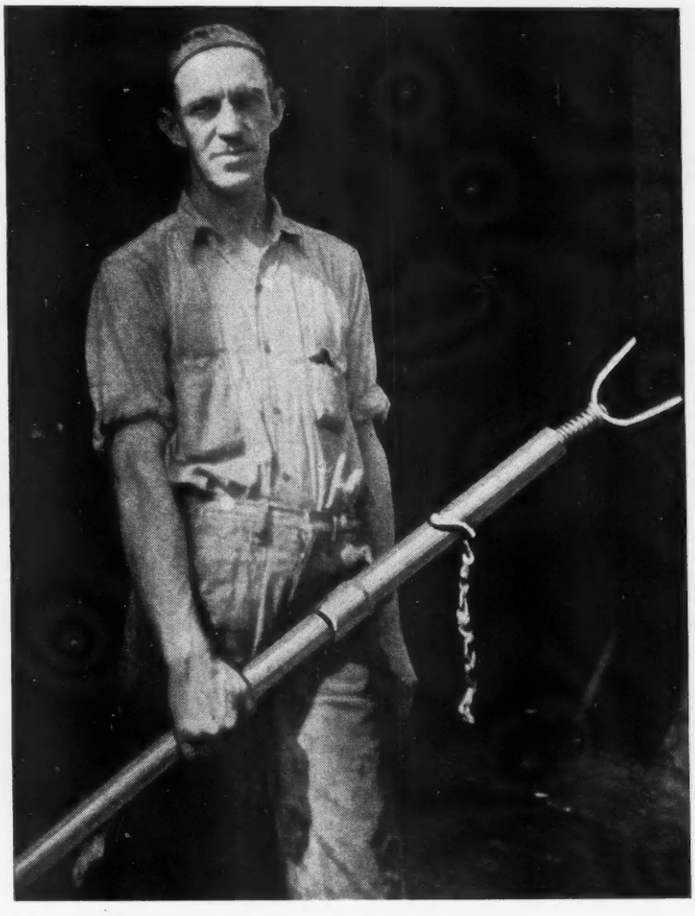
## Tow Bar

*By Edward A. Seuss*

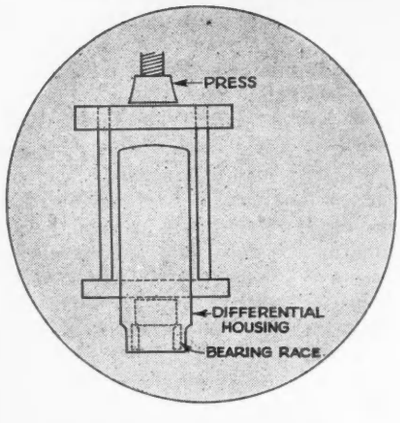
**Mechanic, Troy Laundry, Los Angeles, Cal.**

**1.** We have a tow bar of our own. It is a 1¾ in. pipe 7 or 8 ft. long. One end has a solid bar about 1¼ in. thick bent so as to fit into the socket of a bracket fastened on to the frame of a car. On the other end of the pipe are 2 springs, one entirely inside the pipe to take up any slack. The other extends from inside of the pipe connecting with the other spring, out to a clamp or U bolt made of strap iron about 1½ in. wide and ¼ in. thick, bent so as to clamp onto an axle. There is a hole through both legs of the U to hold a bolt. We also keep a chain on the rod for safety and to comply with the law. The chain is loose and is to be used only in case the bar breaks.

The outside spring takes care of bumping when the tow car is backing up and the inner one absorbs the shocks when the tow car is pulling and also keeps the springs together.



***Right—Edward A. Seuss . . . the tow bar was his idea. See No. 1. Below—W. J. Schaeffer who improved the design of the bearing puller shown in the circle. See No. 2***




## Bearing Puller

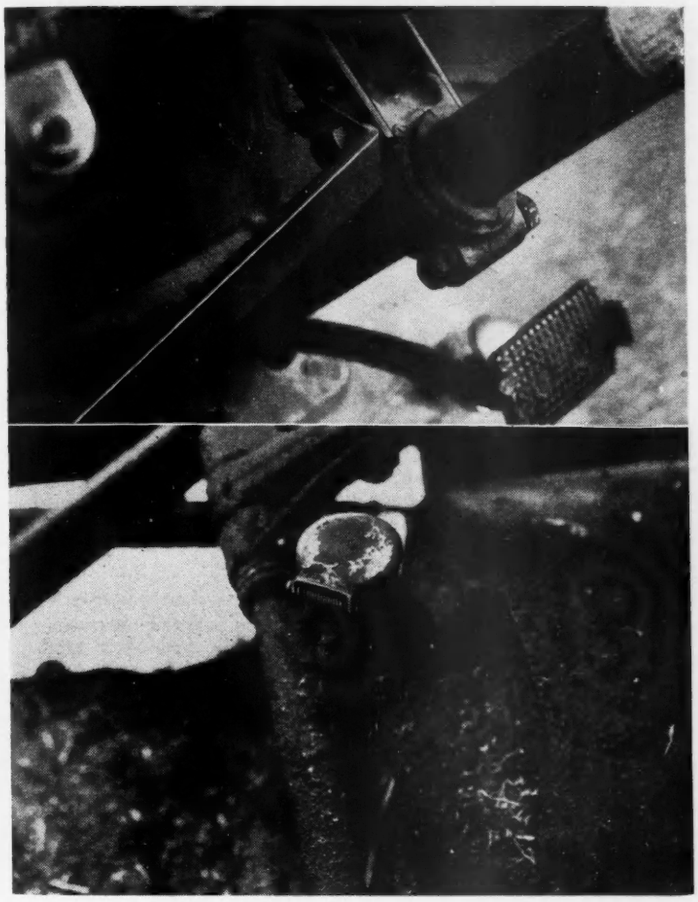
*By W. J. Schaeffer*

**Chief Mechanic, Los Angeles Gas and Electric Co.**

**2.** Removing the race of the Ford A outboard pinion bearing gave us some trouble. It was necessary for us to heat the housing and then spend too much time with hammers and punches to get the race out. The first tool that we made for removing this bearing was a real husky rod with an offset in the middle of it to go around the rear axle housing. When the center piece of the housing was placed in a press the pressure was put on one end of the tool and the other end was against the bearing race.

We have since improved the design of the tool. We now use a device which consists of 2 lengths of 1-in. steel rod held rigidly parallel by a supporting cross piece. At the other end of the rod is a cross piece on which is mounted a small piece of steel tubing about 3 in. long and 2½ in. in diameter which goes against the race. When the housing is placed in the press with this tool the pressure is applied against the top cross piece and the tube presses the race out the bottom.

# From the Woolly West



## Clutch Bearing Oiler

*By A. E. Welch*

**Supt. of Transportation, Wilson and Co., Los Angeles, Cal.**

**4.** One of our troubles was in getting lubricant to the clutch release bearing in one make of truck. The grease fitting was an external one and despite the fact that it was connected to the bearing with a flexible tubing the connection often broke. To remedy this situation we drilled the top of the clutch inspection plate and threaded it with a ⅜ in. pipe which we reduced at the bottom to a ⅛ in. hole. On the top of the pipe we fitted a grease cup packed with wool waste. We fill the cup with motor oil and the drip supplies the bearing as long as there is any oil in the cup.

Some of our trucks had no brace on the steering post which was encased in rubber. The steering wheel shook so badly that it nearly threw the driver from the seat and in addition created a shimmy condition in the front wheels. We ran a brace from the side of the

(Turn to Page 28, Please)

***Left top—Steering post brace and below it the clutch bearing oiler designed by A. E. Welch (in circle). See No. 4***

## Redesigned Radiator

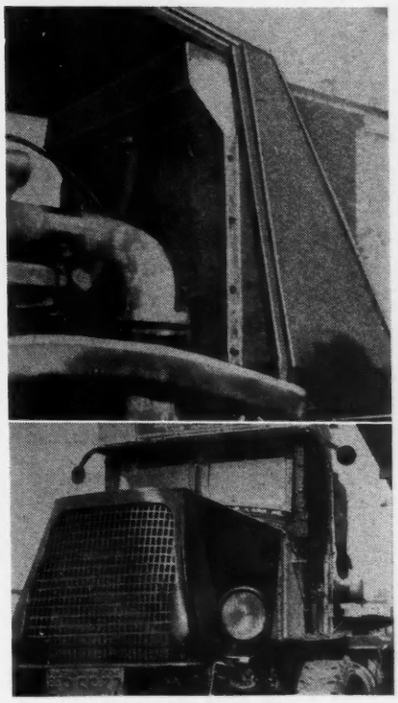
*By Earl Senter*

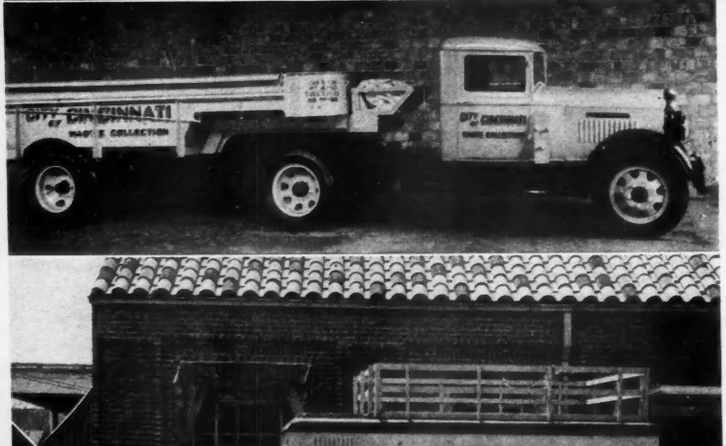
**Shop Foreman, Belyea Truck Co., Los Angeles, Cal.**

**3.** We had a truck with the radiator at the rear of the engine and we wanted to move it up front as we were installing a new engine of a different make and size. Its radiator originally had 2664 sq. in. of surface but we gave the new one 4101 sq. in. to take care of operation in places where the temperature reaches 120 deg.

We removed the old cores and tank and suspended the new one from a special bracket on the side rails. A grill was built in front of it. It was necessary to add 14 in. to the front of the frame although the bumper plate was used. The new core was built by a local radiator company. The dimensions are 37 in. x 24 in. x 4½ in. The mountings for the new engine were supplied with the new engine and the flywheels were identical. The old clutch is used. A new hood was built with side panels that can be lifted out on hot days.

***Right top—Redesigned radiator moved ahead of the engine, and below is a view of the grille and hood construction. See No. 3***





# The ALBUM

## Of Modern Truck Transportation Equipment

A FEDERAL MODEL 20 with 187-in. wheelbase and body 12½ ft. by 74 in. by 68 in. with a classy finish, two doors and a tail gate at the rear together with many other details of modern construction pleased the transportation executives of J. L. Hudson, Detroit department store, so well that they bought a fleet of them. The sleek body lines ending in that curvature of the spine that is recognized as the last word in modern design.

NOTHING has less value than yesterday's newspaper, so the Kansas City *Star* selected these sturdy Reos to deliver the papers on time and in good condition. They run 200 miles and make 17 stops in 5 hours. Bodies by Fitzjohn of Muskegon have coach type entrance doors on both sides, plywood compartment between front and rear with sliding door in partition, jack-knife type doors to load compartment on both sides in rear of wheel housing. The interior, steel-panel-lined and insulated, measures 14 ft. 2 in. long by 89½ in. wide and 72 in. high.

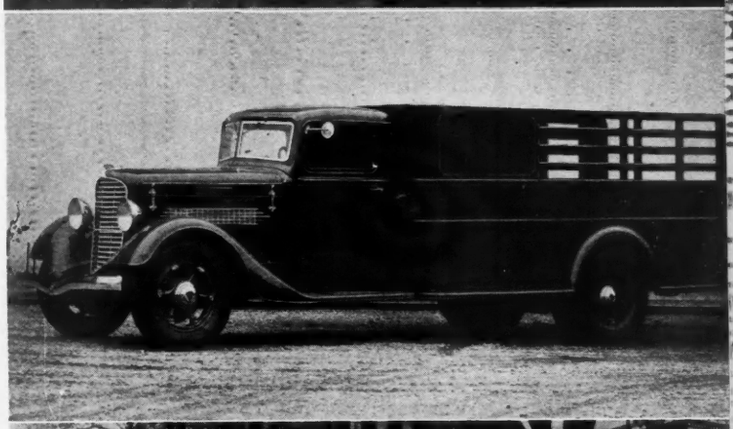
FUEL oil is delivered in style by this General Motors truck with a Heil tank. The truck never enters the customer's driveway, the delivery to the standpipe being made through a 150-ft. hose. Two spotlights illuminate the standpipe and meter during night deliveries. The wheelbase is 124 in., the displacement is 400 cu. in., the horsepower is 110. The three-compartment tank carries 1500 gal. More details are available for those who are interested.

WHEN the City of Cincinnati modernized to haul more for less they adopted Lapeer Trailmobile trailers and aluminum bodies built by Lawrence Bruder. A St. Paul hoist does the lifting. This combination weighs 1/3 less and carries 1/3 more than the trucks used previously. The trailer complete weighs 4750 lb. The body carries 10 cu. yd. Note its construction.

THIS is the newest in refrigerated truck bodies. It's General Electric's idea of what the truck industry needs. This 315 gal. unit makes an average daily run of 200 miles with about 40 delivery stops. Additional gasoline required to operate the refrigerating system is not more than a gallon a day.

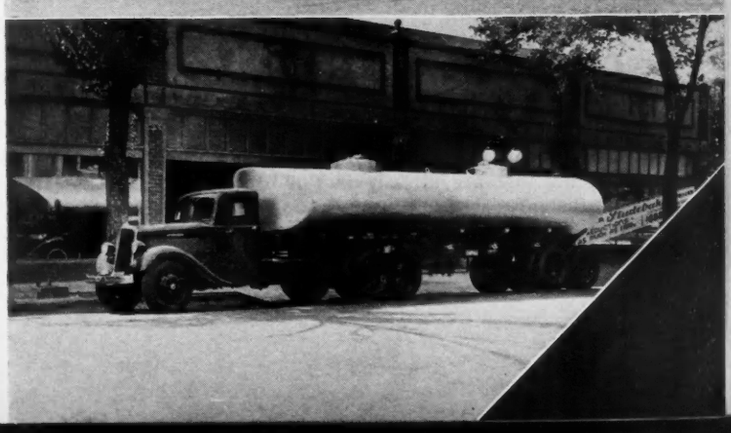
ADDITIONAL details of any unit described will be furnished gladly on request.
A note about this new feature is in order. Representation on these pages is by invitation only. These invitations will be rotated monthly so that readers may see all that the industry has to offer.

HIDDEN inside these streamlines is a 1500 gal. tank with five compartments. The cab, which conforms to the body lines, the body and tank are by Davis Welding and Mfg. Co. The catwalk and the manholes are set in a trough in the falsework. The chassis is an Autocar UDFC, 127-in. wheelbase. Side, front and rear views will tell you more than we can with mere words.



HERE we have something ultra-ultra in modern equipment. It's a deluxe drop-panel streamline stake body designed by Diamond T. The crimes that have been committed against stake bodies are too numerous to mention. But no matter how numerous, this new design atones for them all. Diamond T refused to publish details of dimensions and materials for fear that it would be a tip off and make copying too easy. They could hardly refuse a prospective customer—and that should be a tip to fleet operators.

HERE is an example of the sales promotion department being in the trucking business. This soundproof theatre on wheels comes to milady's door where McCall's magazine entertains with sound motion pictures on homemaking and fashions. The Highway Trailer Co. has arranged the seats, which are probably more comfortable than the ones in your neighborhood theatre, in ramp style for vision and hearing. The screen is 3 ft. by 4 ft. and the projection room is at the rear. The 45-ft. trailer is air conditioned and the temperature is regulated. There are modernistic fixtures and the lighting is indirect both inside and outside.



THIS Studebaker tractor Model 841 with the help of a Utility dolly axle and a Utility dual axle semi-trailer lugs 5800 gal. of gasoline every trip from the Bakersfield oil fields to points all over Northern California. The gross weight is slightly over 60,000. Three drivers operate the vehicle 24 hours per day for a monthly average of 12,000 miles.

## IDEAS OF WILY SHOPMEN

(Continued from page 25)

cowl to the steering post. It does not hold the steering post too rigid but the drivers are now able to hold on to the wheel and the shimmy has stopped.

I am now working on an idea to use the clutch principle in connection with the operation of brakes. My theory is that if the clutch will pull a load by providing the connecting link between the crankshaft and the drive line why would it not hold back a load by reversing this process.

### Anti-rattlers

***By G. D. Frankeberger***

**Shop Foreman, Continental Baking Co., Los Angeles, Cal.**

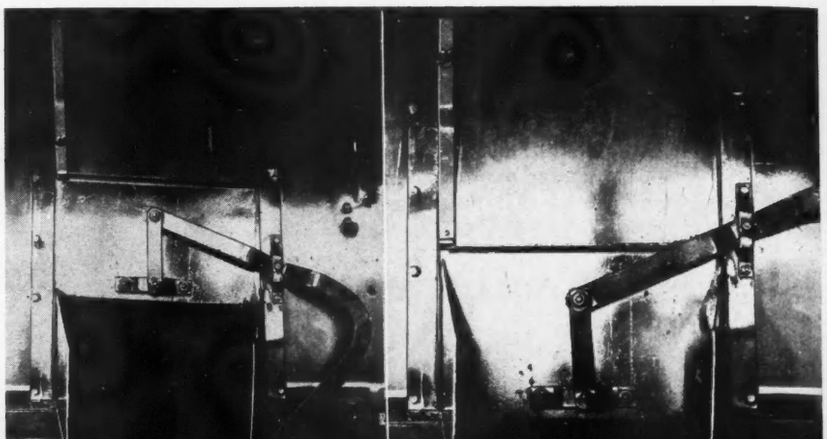
**5.** We used to break between 20 and 30 brade rod anti-rattlers on Ford A trucks each week. We started using an anti-rattler from the BB trucks with a bracket of our own make to make them fit. The bracket reaches from the brake rod to the holes in the frame where the A anti-rattler was hooked up. That ended our trouble. They do not cost any more. They merely take a little more time to install.

### A Shoe to Fit the Foot

***By K. Klapinsky***

**Shop Foreman, M. A. Newmark and Co., Los Angeles, Cal.**

**6.** I don't have mechanical problems because I don't use equipment for something for which it was not intended. The main reason for most of the mechanical trouble that confronts fleet operators is that fleet owners use a one or two-ton truck to haul a 6 or 8-ton load. The moment you put a bigger engine in a place intended for a smaller one your troubles begin. It would not be so bad if the truck was rebuilt so as to make everything balance and fit but very seldom this is done.



*An effective coal chute lock which holds the door open (left) and locks it shut (right). The locking arm swivels on the wing nut. See No. 7*

*G. D. Frankeberger . . . who installed non-breaking anti-rattlers. See No. 5*

### Chute Opening Lock

***By R. T. Elliott***

**Transportation Supt., Philadelphia Coke Co., Phila., Pa.**

**7.** Children used to run along the street behind our trucks and pull down the lever which opened the chute opening in the rear of the truck body, and frequently the driver arrived with the back compartment empty. We even had an accident where a child opened the door and the coke hit him in the face.

We tried a number of locks and finally decided on one designed and built in our own shop. The top edge of the door itself has a small flange on it. Up against this flange is a piece of strap iron slightly angled on the end to hold the door closed. This strap iron pivots on a bolt high enough up on the body so that a child cannot reach it. When the coke has been unloaded the door is held open by swinging the strap around on its pivot so that the other end which is angled the opposite way locks the flange on the door and holds the door in the open position. The operating lever will not open or close the door unless the lock is disengaged.

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### Christmas the Year Around

**IT'S the editorial staff's idea to play Santa Claus to the truck industry during all of the coming year. We can't begin to tell you about all the practical presents that are already in the bag, but it's only fair to tip you off to a few that will be distributed in the January issue.**

The big article will be all about Retreaded Tires. It will be based on a national survey of fleet operators. It will give you the facts on tire retreading.

Then there's a decidedly original article on Uniforming Truck Drivers. Fleet operators reveal their sentiments on the value and the cost of uniforming. Of course you've never read anything like it before.

Clutch Maintenance will be handled in another article, which will discuss the modern methods.

Heck, there's no more space. You must find out about the others yourself.

# AFTER HOURS

## Editorial Comments

### Some Observations Intended to Inspire Faith in the Industry and Fight in Users

By GEORGE T. HOOK
Editor, Commercial Car Journal

EVERYTIME we read that a railroad president, a railroad attorney or a railroad publicist "addressed a group of distinguished, representative business men in Town Hall last night and said that if their competitors are regulated the railroads will be able to retain what freight business they have and recover a considerable portion of that which has been lost," we get a good idea of how screwy some people's logic becomes when they're on the defensive.

Maybe it's a drug that serves the dual purpose of dulling worried security holders into a feeling of security, and stimulating the public to have a feeling of pity for the poor, unfairly treated railroads. That's not important, really. Nor is it important that these railroad spokesmen have so hopped themselves up with the same drug that they seem to believe their own hallucination—that lost business can actually be legislated back into the laps of the railroads.

THE really important thing is that there is so much flexibility in the motor truck, both as to manufacture and ownership, that the hamstringing effects of any kind of legislation passed by Congress can readily be counteracted. No man well informed on highway transportation overlooks this fact. Federal Coordinator Eastman is fully aware of it, to judge by his public statements, and that's why you won't find him recommending hamstringing legislation.

Most of the reasoning which Mr. Eastman has indulged in publicly has centered around the flexibility of ownership, using that simplified term for what type of carrier shall operate trucks. He freely admits that if legislation makes things too hot for common carrier and contract carrier operators the effect will be to force shippers into operating their own trucks as private carriers. That's because regulation of for-hire carriers will have no effect on the economies represented by the vehicles themselves, and they'll be there for shippers to grasp by means of private operation. And they'll be grasped without a doubt because of the intensely competitive character of modern business.

The railroad spokesmen, of course, seem to think that they can reach even the private carriers by persuading legislators to saddle them with a lot more taxes and size and weight restrictions that would make highway transportation prohibitively costly. Right here they reveal the feebleness of their reasoning. They appear to take it for granted that the motor truck as an instrument of transportation hasn't the power to change itself to meet every new burden, every new restriction. In this they disregard woefully the ingenuity of truck manufacturers, the limitless possibilities for engineering improvements. In short, they blind themselves like ostriches to the virtues which have made and will continue to make the motor truck a lethal competitive weapon —its flexibility of design and construction.

THE history of truck manufacturing offers substantial proof that there is only one movement, and that is forward; that the only constant is change —change to meet the needs of users confronted with new operating conditions and problems, not all of them due to legislation. The aliveness of the industry to change is, paradoxically, its deadliness to competing transportation agencies. It's an aliveness that has been stimulated by necessity. The greatest advances in engineering have been made to overcome man-made obstacles. And the heritage of the past is the promise of the future—that no matter what the obstacle, legislative or competitive, the truck industry will rise to meet it and to beat it.

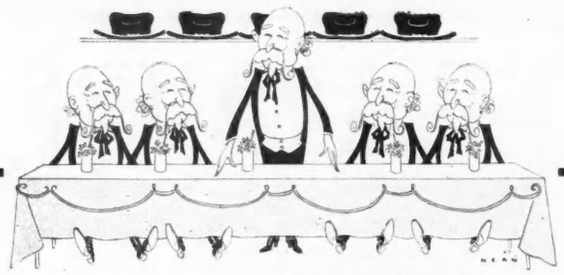
THERE isn't a unit on the present-day motor truck, despite the improvements made in the last five years, that cannot be further improved. Untold efficiencies and economies are still to be realized. This is true of body materials, fuels, component parts and external design. And the really flexible part of all this is the ability of operators to take advantage of many of these improvements without wholesale scrapping of present equipment unless expediency dictates that it is the wiser course. Thus, in many cases, the extent of the capital investment necessary to meet changed condition will depend upon the nature of existing equipment and the seriousness of confronting conditions.

This is an advantage never possessed by the railroads. Change has always had an appalling significance. It meant stupendous capital investments arising, unfortunately, at times when railroad finances were least able to bear them. Yet it remains problematical what the railroads would do if finances were willing; there's still the flesh to consider, and it has been notoriously weak. The fight against highway transportation is an evidence of this weakness. So is the present, so-called modernization program that is being pursued by some of the larger lines. Their idea of modernziation is electrification with "streamlined" engines. And that in the face of professions that roadbeds weren't built to stand much more in the way of speed unless it's accompanied by a substantial reduction in the weight of rolling stock; in the face of public demand for a comfortable ride, and in the face of diesel rail-car developments.

ADMITTED that it's a tough spot for the railroads to be in. But the very competitive conditions in transportation today make it a tough spot for truck manufacturers and for-hire truck operators as well. The only difference is that of spirit—the truck industry is not and never will be on the defensive.

From the truck industry's standpoint the future is not alarming although there may be some alarming shadows on the 1935 legislative front. They are simply a challenge. And while locking fenders with them in mortal combat to make certain that they shall not pass, it should bolster the courage of every one in the industry to have faith in the industry's ability to overcome all obstacles.

Make it your New Year's resolution to fight for right and have faith in the future.



*Speakers became as gracious as Southern Colonels*

# She Stooped to Trucks and Conquered

## Mrs. Weaver, of Wyoming, Confesses She's Not in Love With Dump Truck Operation But She Made a Success of It Anyway

By GEORGE T. HOOK

GENTLEMEN of the trucking industry, consider yourselves introduced to Mrs. Violet B. Weaver, operator of a fleet of nine trucks, and president of the Western Transportation Co., of Casper, Wyoming.

Mrs. Weaver comes from the wide open spaces where men are men and women, apparently, won't talk. At least you would have come to the same conclusion if you had tried to interview Mrs. Weaver. The writer tried his hand at wangling a few facts from her about herself but it didn't take him long to learn that he was talking to a lady in whom determination was a strong personal characteristic. The type that, once she determined to do a thing, just couldn't be prevented. And apparently she had determined not to talk for publication.

Of course, she wasn't altogether silent. She gladly furnished some of the innocent details of her business. But when an attempt was made to draw her into discussing controversial topics, or giving opinions on questions that a reporter would consider swell copy, she defied a woman's prerogative, and just wouldn't change her mind about not talking.

All this happened in Chicago during the first annual convention of the American Trucking Associations, Inc. Mrs. Weaver had flown from Wyoming and was present as a delegate to the electoral college which chose permanent members of the National Code Authority for the trucking code. The honor came to her as a result of her untiring efforts in promoting the code way out in Wyoming. In fact, she has the distinction of being the only woman acting as Code Authority.

MRS. WEAVER walked in on the convention on a Tuesday morning and the effect was electric. President Ted Rodgers apologized every time he forgot to say "Lady and gentlemen;" Percy Arnold, of the cultured state of Rhode Island, stopped telling the stories that he is reminded of no matter what the occasion (a downright pity because he tells the kind that bring bellows instead of blushes), and every speaker became as gracious and mellow as a southern colonel with half a dozen mint juleps inspiring him to flights of oratory.

This lasted throughout the convention. And it is probably safe to say that Mrs. Weaver's presence had a lot to do with keeping discussions on a dignified plane that would do credit to a diplomatic conference.

The moment Mrs. Weaver appeared this news hound scented a story. So did Morris Glazer, the demon publicity director of the A.T.A. Morris was the first to get to her. "She won't talk," he reported, "and she won't even pose for a picture." This was a blow. Here was an attractive woman and a very intelligent one (as later events developed), and unquestionably the best-looking dump truck operator in the world—and she was cold to publicity.

"Try her again for a picture," we urged Morris. Morris tried but he didn't succeed, and remembering the proverb he tried and tried again. But Mrs. Weaver wouldn't waiver. Morris became harder to live with. He saw himself losing thousands of dollars' worth of free publicity in the rotogravure sections of Sunday newspapers. Finally he admitted defeat. "You try her," he said, but his tone indicated it was no use.

WELL, you may not know it, but next to getting a raise nothing pleases a reporter more than to be able to show up a high-powered publicity director. So your reporter accepted the challenge. An opportunity came just before the final session of the convention. Mrs. Weaver was making some inquiries at the registration desk when your reporter, who had determined not to be out-determined, happened by. Thoughts flashed . . . There she is . . . she's smiling . . . she's in a good mood . . . approach her now . . . be firm . . . no flattery . . . business women don't go for that stuff . . . go up to her now . . . talk fast and earnestly . . . she has turned . . . she's coming this way . . . here goes . . .

"Pardon me, Mrs. Weaver, may I speak with you a moment?"

"Why certainly." There was kindness in the voice but the smile was

*"A woman isn't in the trucking business because she chooses to be but because circumstances put her there. If I have been successful, it's because I put my heart and soul into everything I do"—Mrs. Violet B. Weaver*

gone. A break for your reporter because it made him as serious as he wanted to be. If she had kept on smiling, he would have had to smile when he preferred to be firm . . . and earnest . . . and determined.

"I represent the Commercial Car Journal. (Her eyes flashed recognition of the publication and the decisive manner with which she tucked her handbag higher up under her arm indicated that she scented publicity and was preparing to resent it. Your reporter spoke faster.) Among its readers are 25,000 fleet operators like yourself. I know they would all like to know something about you. It is unusual for a woman to be in the trucking business, and yet the fact that women are in it seems to indicate that there is something mighty attractive about it. Reading about you will make the men and the women prouder of their connection with the industry. Won't you please let us take a photograph of you? It will take only a moment."

Well, by that time there were signs that Mrs. Weaver was softening in her attitude. The handbag had slipped lower and lower as her tense determination relaxed until it rested in her left hand. Victory was in sight when her right hand came up and fingered the bag. She lowered her head, gazed for a moment at her bag, and quickly looked up.

"I DON'T like this sort of thing. I have a horror of publicity." Her slight shudder was expressive but more impressive was the fact that she was giving your reporter an argument instead of the gate. It meant certain success if her fears could be overcome. At that moment the industry got a break when a delegate from Colorado, who had been listening in, shoved in a very helpful oar. "Go on and let him take your picture this once," he said persuasively. "It won't do any harm."

"Well," said Mrs. Weaver, giving approval by indirection, "I'd just dislike to have my picture taken in front of a lot of people."

And that's how the picture you see on this page came to be taken. The photographer set up his camera in an unoccupied conference room. Everything was in readiness when Mrs. Weaver came in. She stood for the first picture and just wouldn't smile. She sat for the second, and was more at ease because when the photographer, your reporter and Publicity Director Glazer (who took the reporter's asserted superiority like a gentleman) begged her singly and in unison to "please smile," she yielded enough to permit a smile to lurk around the corners of her mouth.

That part was comparatively easy.

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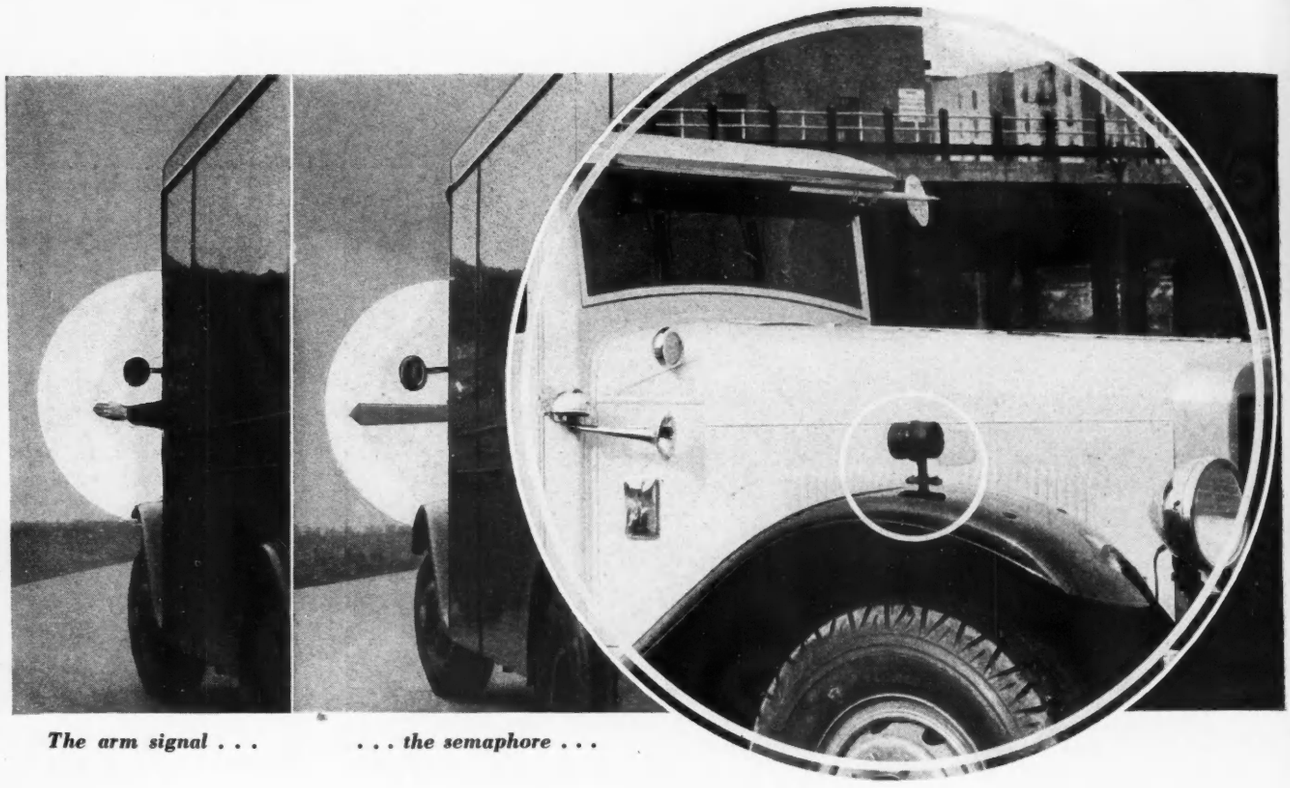


*The arm signal . . .* *. . . the semaphore . . .*

# DIRECTION SIGNALS!

## Survey of Fleet Operators Proves That Signals Are Necessary to Highway Safety But Agreement on Best Type of Device is Lacking

By HENRY JENNINGS

A HUGE truck is rolling down a dark highway. The driver pulls out of the far right lane into the center or right center lane. What is he going to do? Make a left-hand turn? Make a right-hand turn with allowance to keep his rear wheels from mounting the curb? Or is he merely passing a slower vehicle in the right-hand lane? Any of these things are probable but how are the drivers behind to know?

How should the driver make known his intention? Perhaps he motions with his arm but the cab is so narrow and the body is so wide that his hand cannot be seen from the rear. In that case so far as the drivers behind are concerned he did not signal. Perhaps he does not stick his arm out and if he does not, who can blame him? (Be careful now . . . under extreme conditions only 2 per cent of us signal.) He may need two hands on the wheel; maybe it is raining or snowing or he may be in a ventilated cab that makes it necessary for the driver to be a contortionist if he is to get his hand out.

If he uses a board semaphore it is possible that the lights on the cars to the rear are on the low beam and the drivers do not see the board. So far as practical purposes are concerned the driver still did not signal. At least he did not convey his intention. If those in the following cars did see the board, all it meant to them was that the driver ahead was going to do something because it is impossible to signify left or right with the board.

But doubtless everyone agrees that the driver should signal the drivers behind him. No one wants to see 23 million vehicles turned loose on the highways with an agreement that each driver will look out for himself and himself only. Legislators are recognizing this and today we have laws in quite a number of states which make some form of signalling compulsory and other states are planning to follow suit.

Theoretically signalling with the arm is satisfactory, but practically, it is not. Different types of construction make it impossible to make the arm visible and lights with the beam directed low make it difficult to see the arm at night.

Proof of the fact that trucks long ago outgrew arm waving as a method of signalling lies in the figures gathered by the Travelers Insurance Co., which should know something about the matter since it is in the business of paying the bills for accidents. These figures inform us that during 1933

*. . . the electric signals—left, above and right*

**ON a football field signals are meant to be secret. On heavily-traveled highways the signals of a truck driver are meant to be known to everyone within sight of them. If there is any secret about them, there's likely to be trouble. And trouble is costly.**

**The fact is that on our highways there is too much secrecy among the drivers ahead about their intentions. Proper signalling is absolutely necessary to safety.**

**This article deals with the subject in detail and discusses the merits of various types of signalling devices. It is based on personal contacts with many fleets operating along the Eastern seaboard.**

**If you want detailed information on the various signalling devices, just check "A" on the postcard on page 52.**

there were 35,760 accidents due to failure to signal or to improper signalling. These accidents caused injury to 44,480 persons and caused the death of 380 more.

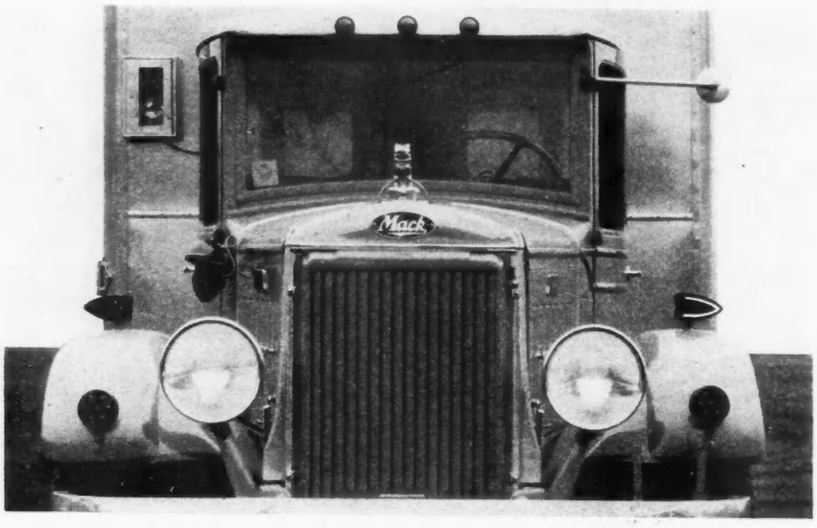
AT one time most states required drivers to signal their intention to turn by either extending their arm or by using a signal device. Recently two states have withdrawn their permission to signal with the hand so far as trucks are concerned. They demand that the signalling be done by an approved mechanical device. The states are Virginia and Connecticut.

While this change is "progressive legislation" and is designed primarily for the benefit of the highway user, it has had a very undesirable reaction. In the absence of constructive selling the signals first come to the attention of the fleet operator as something that he is required by law to spend his money for. So the fleet operator indulges in the great American right of howling about the injustice of the thing.

Connecticut and Virginia deserted their arm-signalling provisions for a number of definite reasons. Inspectors at various places found that only a surprisingly small part of the total number of drivers attempted to signal at all. On a cold day at one location the number of drivers who made any attempt to signal a turn fell as low as 2 per cent. Under ideal weather conditions in a residential neighborhood the number signalling reached as high as 60 per cent.

Even when the driver makes a sincere attempt to signal he is not always successful in conveying his meaning to other drivers. In trucks it is impossible to get drivers with long enough arms to make their hands visible from the rear. Even if the hand can be seen

## SIGNALS!




***Electrically operated direction signals mounted in the above fashion may be seen by oncoming drivers—day or night.***

from the rear the long use of arm signalling has developed so many sign languages that no one understands what the other fellow is trying to say, and sometimes it appears that the ignorance includes the driver making the signs.

IF arm signals are to be replaced by something else the question of the kind and quality of the substitute arises. The desirable substitutes started with the semaphore which is a painted board. It has something in its favor. It is visible in daylight; it is positive in action, and it is durable and inexpensive to maintain. Against it there are the facts that it is totally dependent upon the other vehicles' headlights for visibility at night, and it does not indicate the direction of the turn where it can be seen except from well in the rear. The driver alongside or to the rear and one side can ascertain only that the truck is not going to continue straight ahead. To overcome some of these objections some manufacturers are lighting semaphores.

No one fleet operator along the eastern seaboard where COMMERCIAL CAR JOURNAL conducted an investigation on this subject went on record as favoring the old type railroad semaphore signal despite the fact that such signals are used on a good many trucks in their collective fleets. They had kind words for their ability on big trucks during the daylight hours but truck transportation has outgrown daylight operation.

So the board semaphore is being supplanted by the electrically lighted semi-automatic signal—in two states by law and in some other places by choice. The things that the fleet operators look for in this type of signal are visibility in full sunlight, durability and low maintenance cost.

There are operators who are allied against the lighted turn signal devices because in the past they have bought some of them and tried them. They did not stand up in hard truck service. Their lack of ruggedness was further emphasized by the fact that replacement parts were not available.

Other operators feel that the price of the signals is too high, while the largest group who do not incline toward the use of signal devices are actuated by the prejudice mentioned in an earlier paragraph, i.e., the fact that their use is being forced on them.

MOST operators still have an open mind on the subject. Among those who approve lighted turning signals is a voice from Connecticut. It speaks with authority because it belongs to the operator of about 90 trucks. It says, "We installed signal devices on the trucks we operate in Connecticut to meet the requirements of the law. At first we had a number of accidents directly traceable to the signals. We believe this was due to the fact that the drivers though they could caution in turning because they had a signal device. Besides since the signals were new other drivers did not know where to look for them. After the first flurry was over they began to do a good job for us and we think enough of them to have them on all of our out of state trucks."

Insurance companies in some cases recommend them but for the most part such recommendations are left to the safety engineer in charge of each district for the company. Six such engineers questioned like the idea of signal devices but admitted that their reasoning was a little vague on the subject due to lack of experience with them.

The Commercial Vehicle Operators, a body of New York fleet operators affiliated with the National Safety Council, did not get a majority vote in favor of turn signal devices at a recent meeting. Some questioning after the meeting uncovered the fact that some of the votes, both aye and nay were based on opinion and not on experience and that there had been some unfortunate experiences with devices that lacked durability.

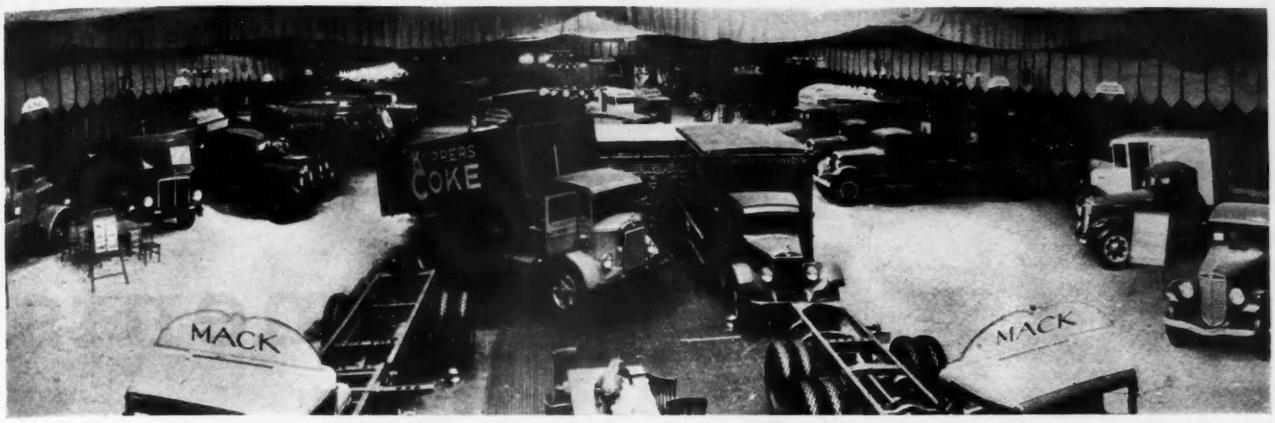
One reason that is advanced for the use of signal devices is that when the driver's intentions are known he is handled more expeditiously by traffic policemen and is able to make better time especially in congested areas.

Another reason advanced by the signal manufacturers for the use of signals is that they will help create a better feeling toward trucks on the highway and help prevent the piling up of anti-truck legislation. If this is so it is enough in itself to make it worth the price of admission to the circle of signal users.

SO that fleet operators may be informed as to the existing legislation, here are brief excerpts from the motor codes of Connecticut and Virginia.

Connecticut specifies that any person who shall operate on any highway any motor vehicle so constructed or so loaded that he is unable to clearly indicate by hand signals to both approaching and following traffic his intention of stopping or turning unless such motor vehicle shall be equipped with a mechanical signalling device approved by the Commissioner of Motor Vehicles or shall fail to cause such device to be maintained, at all times in good and sufficient working order, or shall fail to use the same when making any stop or turn shall be fined not more than $25.

Virginia specifies that any motor vehicle which is so constructed or carries a load in such a manner as to prevent a hand and arm signal required in Section 75 of this act from being visible both to the front and rear of such vehicle, shall be equipped with a mechanical or electrical signal device which meets the requirements of this act and is of an approved type.




*View of the truck show staged at Newark during the Regional Transportation meeting*

# Transportation Men Discuss Diesels

## Maintenance Angle Takes Spotlight At Newark Meeting; Warning Is Given On 1935 Legislative Possibilities

THE Regional Transportation Meeting, held in Newark, N. J., last month under the sponsorship of the Metropolitan Section of the S.A.E., concerned itself principally with approximating current developments and gaging their possible future effects on commercial vehicle operations. Topics ran the gamut of legislation, fuels, diesels and refrigeration, the latter including air-conditioning.

Somewhere in the neighborhood of 500 men interested in commercial transportation attended the various sessions, and about 5000 braved the chilly atmosphere of the Armory to see the truck show put on by some 30 manufacturers.

The diesel session developed the liveliest discussion. At the session, N. Mitchell, resident engineer of the Asiatic Petroleum Co., Ltd., London, presented a paper in which he sketched diesel development in England. For relative operating costs he drew entirely upon the experience of the London General Omnibus Co. His conclusion was that "from the point of view of running costs, the compression ignition engine is easily cheaper than is the gasoline engine. From the point of view of maintenance, the advantage is a debatable point." Comparative costs which were quoted plainly showed that so far as the past was concerned there was no room for debate because diesel maintenance costs were distinctly higher. Debate enters only when the current trend is considered. "Recent experience shows," he said, "that the maintenance costs are falling as the fleet is increased and becoming more standardized."

Whether it was because the maintenance part was the most vulnerable portion of the paper or because this angle was uppermost in the minds of the operators and engineers present, it remains a fact that the discussion did center largely on the cost of maintaining a diesel engine.

John F. Winchester, of the Standard Oil Co. of N. J., said he anticipated considerable difficulty from a repair and maintenance standpoint. "I bring out particularly the question of overhaul and maintenance," he said, "because the scale of wages which we pay here is, relatively speaking, much higher than in England. That was, as I saw it, what had an important bearing on the overhaul repair cost of these units."

A. A. Lyman, of Public Service Coordinated Transportation of New Jersey, came to the defense of diesels. Admitting that his experience with diesels was insufficient to enable him to form conclusions on maintenance costs, he said that in any consideration of maintenance cost it must be borne in mind that because diesels are now produced in small quantities the repair parts are necessarily greater than the corresponding part for a gasoline engine. "However, on one statement I heartily agree," he said, "and that is that more specialized maintenance would be required on diesel engines than gasoline engines."

Elmer Griese, of the Cummins Diesel Engine Corp. of N. Y., brought out what he said was another important point. "We have found in several hundred operations all over the country," he said, "that the maintenance cost on the truck as a whole was reduced as a result of using the diesel engine. This was chargeable to the fact that there is not so much gear-shifting; due to the high torque characteristics of the diesel the necessity for racing the engine was less; tire wear was less; transmission system wear was less; universal joint wear was less."

The interest in diesels was nowhere more apparent than at the show, where the diesel exhibits attracted large crowds.

Propane and butane came up for speculative treatment both as fuels and

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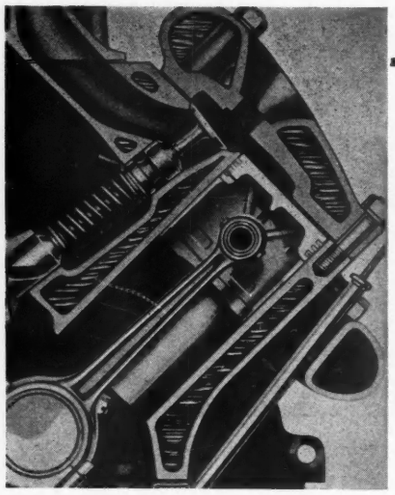
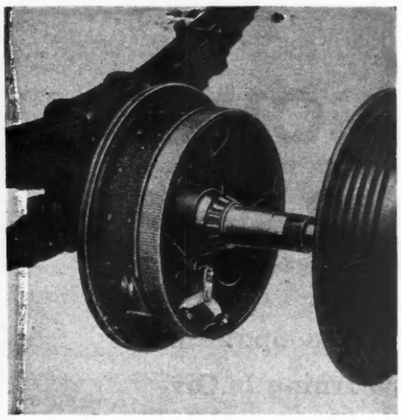


*Water jacket extends the full length of cylinders*

# Ford Puts 49 Improvements In 1935 Truck

## Directed Flow Crankcase Ventilation, New Brake Design, Larger Clutch, Engine Over Axle Are in the New Design

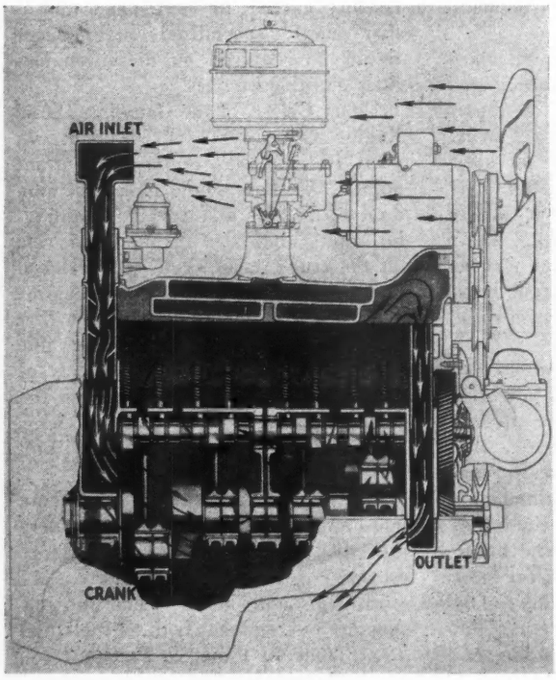


*New brake design with ribbed drums for cooling*

THE new 1935 Ford is here. Chief among the new features are more pleasing appearance and numerous mechanical improvements including directed-flow crankcase ventilation, new design brakes with cooling ribs on the drums, a larger clutch and greater capacity cooling system. The engine has been moved forward over the front axle for better weight distribution. The front spring likewise has been located well ahead of the axle.

Although 49 improvements are announced, there is but a single change in the 80-hp. V-8 engine—a directed-flow crankcase ventilation system. Oil is fanned through a scoop at the filler and after circulating through the engine it is exhausted through an outlet behind the timing gears.

*Directed flow crankcase ventilation system*



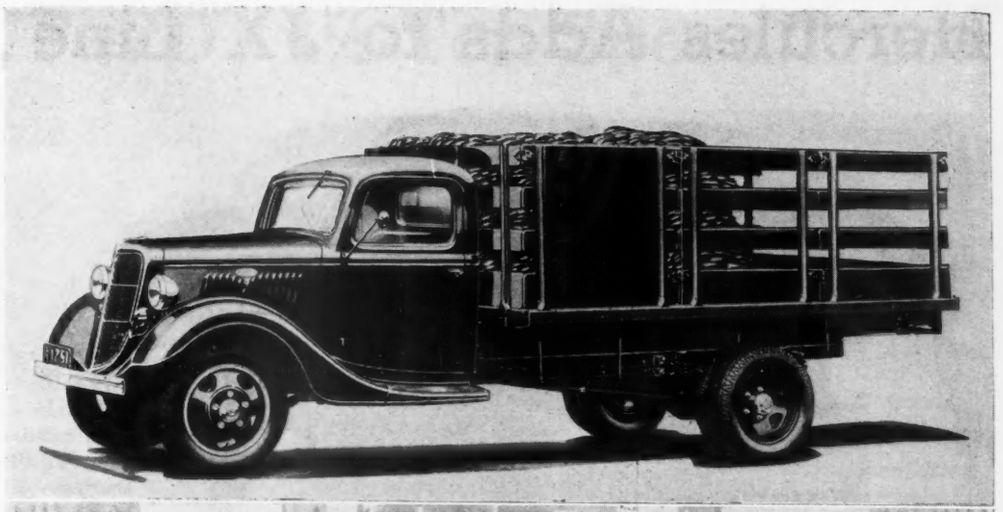

The line for 1935 includes seven types. Special attention has been given to smartness of appearance in all of these with new front-end appearance, a new cab design and wider and deeper fenders with large skirted aprons.

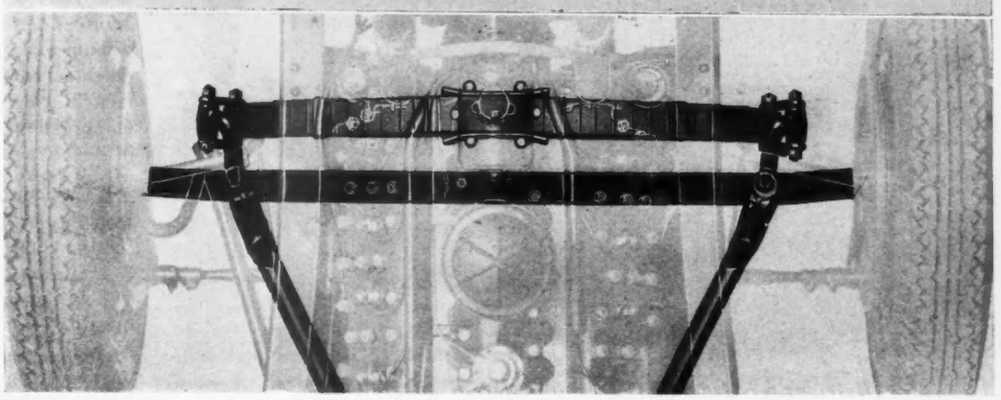
The truck is available in two wheelbases, 131½ and 157 in. and are of the following types: 131½-in. chassis—panel, platform, stake, hydraulic dump, cab and chassis with dual wheels and auxiliary springs for tractor use; 157-in. chassis—platform and stake.

The additional room on the truck chassis has been obtained by moving the engine forward 8 11/16 in., increasing the distance from the back of the cab to the centerline of the rear axle by 6½ in. This moved the load center forward so that more of the load is now carried on the front axle. This more nearly ideal distribution of the load gives increased brake effectiveness and more uniform tire and brake wear, also allowing acute angle turns with full-width semi-trailer, and reducing the body overhang.

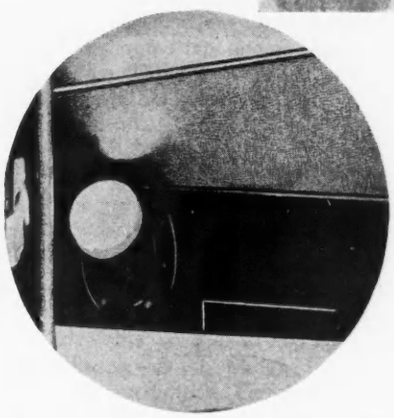
A high-efficiency cooling system, including a radiator wider by 2¾ in., giving 15 per cent greater cooling area, is a new feature. It includes larger water pump impellers and a six-blade 15½-in. fan. Water-jackets extend the full length of the cylinder walls and along the upper crankcase walls, keeping both the engine and the oil in the crankcase at efficient operating temperatures.

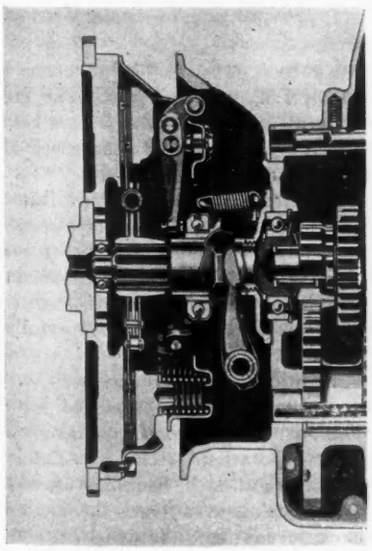
THE new heavy-duty truck-type clutch is built for longer life and smoother engagement. The pedal pressure at idling speeds is reduced. Centrifugal force developed by means of weights at the outer ends of the clutch release levers is applied as the engine speed increases to insure maximum resistance to slippage. The clutch diameter has been increased to 11 in. giving more than 123 sq. in. of frictional surface. Its design has been simplified with fewer working parts, and the clutch is ventilated for cooler operation.





*Right: Top—A more attractive cab design tops off the mechanical improvements. Bottom—Engine is over the axle and front spring is moved ahead of the front axle. Below — The gas cap is reached without lifting the seat*





Brake drums are cast alloy iron with integral cooling ribs and an extra large reinforcing rib to prevent distortion. The brake-shoe pressure is more evenly distributed by a newly-designed and simpler internal mechanism. The brakes are designed to require less frequent adjustment.

Steering stability and riding ease have been improved by mounting the front spring 4 in. ahead of the front axle. The front spring is longer, with shackles closer to the wheels. Oilless shackle bearings are provided. The front axle is heavier.

The full-floating rear axle, in which the load is carried on the reinforced axle housing, is continued. All driving and braking stresses are transmitted directly to the frame through the full torque tube and radius rods.

Freely shackled semi-elliptic rear springs support the frame at four widely separated points, resulting in a material reduction in frame flexure and body weave. Auxiliary springs, recommended for unusually heavy loads, are available upon order.

The steering gear is of the "worm and sector" type, with 17 to 1 ratio for easy handling.

*Left—Larger clutch gives 123 sq. in. of frictional surface*

The new coupe-type cab is of welded all-steel construction, and is designed to give the driver passenger car comfort. The new adjustable driver's seat is of the tilting-back type with comfortable mattress-top seat cushions. The seat width has been increased to 48¾ in.

The new 18-gallon gasoline tank has a conveniently located filler-cap, doing away with any need for the driver to lift the seat. The cab interior is fully lined with durable material in a pebble-grain finish. Roof and dash are insulated. Safety glass is standard equipment in all windows, doors and windshield.

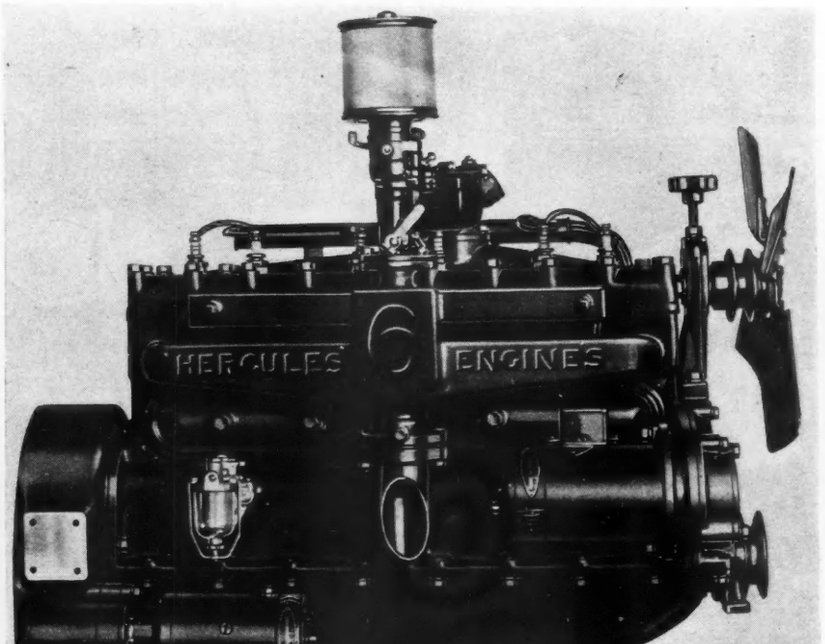
BAKED enamel finish, with matching fender colors, is provided on all types.

The new triple ventilation system includes clear vision ventilation in the door windows, a windshield opened by a single center control, and a screened cowl ventilator.

Rolled edges reinforce the deep-skirted fenders and provide a drain trough for water thrown up by the tires, preventing excessive splashing of the body.

The speedometer, ammeter and fuel gage are grouped in an attractive panel at the left side and directly in front of the driver. A dispatch box is placed at the right side of the instrument panel.

# Hercules Adds to "JX" Line




*Hercules 6-cylinder JXD develops 83.8 hp. at 2800 r.p.m.*

THE Hercules Motors Corp., Canton, Ohio, has added a larger bore model to its "JX" series of 6-cylinder gasoline engines. This is the "JXD," 4 x 4¼ in. and 320 cu. in. displacement.

This engine develops 83.8 h.p. at 2800 r.p.m. and 65.5 h.p. at 1800 r.p.m. with maximum torque of 204 lb. ft. at 1000 r.p.m. (N.A.C.C. Rating 38.4 h.p.) A 2½-in. chrome molybdenum crankshaft is supported by 7 bearings of the high lead bronze precision type. The cylinder and crankcase are cast integral of molybdenum alloy iron. Cylinder head is detachable, the "L" head design being fitted with exhaust valves 1⅜ in. clear diameter—inlet valve 1½ in. clear diameter.

Lubrication is forced feed by geared pump to all connecting rod and main bearings—oil thrown off from the rods lubricating the cylinder walls. Aluminum alloy pistons are fitted with four rings all above the piston pins—an oil control ring 3/16 in. wide and three compression rings ⅛ in. wide.

ALL connecting rod bearings of high lead bronze precision type are 2 in. in diameter—the length of rod being 8 in. from center to center—either a 1¼ in. or 1½ in. carburetor can be installed—and a distributor mounting is provided on left hand side where the centrifugal water pump is also mounted. A magneto mounting is available as optional equipment.

This "JXD" is supplied with No. 4 or No. 5 bellhousing for 3 or 4 point suspension and flywheels for any standard clutch. Standard ⅞ in. x 18 in. spark plugs are used. All four engines in the "JX" series are identical as to installation measurements, which facilitates installation of the model developing the desired performance.

# New White Heavy-Duty

A NEW medium heavy-duty truck, adaptable for all general hauling purposes, is in production by The White Motor Co., Cleveland. Designated as Model 718 this new truck combines high-load carrying capacity with a medium size economical power plant, having a gross rating of 20,000 lb. with a range of wheelbases from that of a tractor of 130 in. by increased steps of 18 in. to 190 in.

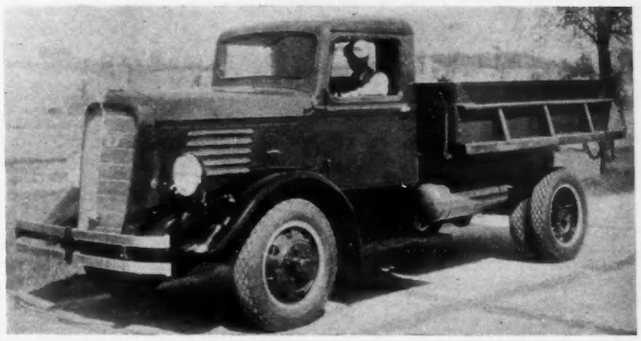
The engine is a 6-cylinder L-head type with a piston displacement of 303 cu. in. developing 90 h.p. at 2800 r.p.m. The engine crankshaft and camshaft run in seven main bearings. Full pressure filtered lubrication is carried to main, connecting rod, camshaft, and wrist pin bearings. Five-speed transmissions are available, one with fifth direct and one with overspeed, the latter having quiet gears in three speeds.

Four-wheel brakes of large area hydraulically operated with a vacuum booster are standard equipment with air brakes optional. A full floating double reduction axle with spiral bevel and herringbone gears is used with ratios of 7.32, 8.15 and 8.95. The 718 has a gross grade ability of 36 per cent with the 8.95 ratio and a road speed of 46½ m.p.h. with the 7.32 ratio.

An 8-in. heat treated channel frame is employed with heavy-duty springs using helper springs on the rear; 9.00-20 tires are standard equipment. A chrome plated radiator is slightly swept back and the fenders are fully enclosed.

At additional cost, a roomy, well ventilated 60-in. cab is furnished with insulation to insure comfort during all weather operation. This insulation covers the roof, dash, floor boards, and special housing cover over the engine which protrudes into the cab.

# FWD's 1½-Ton Speed Truck



*FWD Model HS 1½-ton has a road speed of 47 m.p.h. under full load*

THE Four-Wheel Drive Auto Co., Clintonville, Wis., has developed a new 1½-ton speed truck known as Model HS. The specifications call for a road speed of 47 m.p.h., with the truck fully loaded.

The new model is propelled by an 84 h.p. engine which develops 185 lb. ft. of torque. The principle of applying power equally to all four wheels, which is used in all previous models of the Four-Wheel Drive Auto Company's line, is retained in the new Model HS. Ease of steering and simple handling is increased by setting the front axle back 42½ in. from the front bumper. The HS model employs this axle position also to secure equal distribution of load.

This new entry in the truck field is built for heavy duty as well as fast traveling. The 6.50-20 tires are dual in the rear.

The new Model HS is built for the general market. Retailing at $2400, it is the lowest priced Clintonville Four-Wheel Drive truck ever offered.

The new speed truck is convertible from a four-wheel drive to a front-wheel drive or rear-wheel-drive—in emergency. The chassis weighs 5220 lb. including the cab. The gross weight is 11,200 lb. Wheelbase, and body space back of the cab, are made variable. With a 132-in. wheelbase, 120 in. of loading space is available back of the cab, while a 121-in. wheelbase gives 96 in. of loading space, and 142-in. wheelbase allows 144 in. for load use.

The power from the engine is transmitted to the four-speed transmission through a 12-in. plate clutch, and from the transmission the power is transferred to the center differential where it is divided and distributed to each axle. Compensation for the difference in distance traveled by the front and rear axles is solved by a conventional bevel-gear type of center differential. The center differential lock operates from the driver's seat. Complete control of this speed-truck is maintained through four-wheel hydraulic brakes operated by a vacuum booster.

# . . . Discuss Diesels

(CONTINUED FROM PAGE 35)

as refrigerants. W. Z. Friend and E. Q. Beckwith, of the Philgas Department of the Phillips Petroleum Co., gave proof of the superiority of these liquefied gases over gasoline. They agreed, however, that considering the economic factors involved they cannot take the place of gasoline as a universal fuel. They offer greatest advantages as motor fuels in large stationary engines, high-speed rail cars and rail trains where high power output per unit of engine weight is a very important factor.

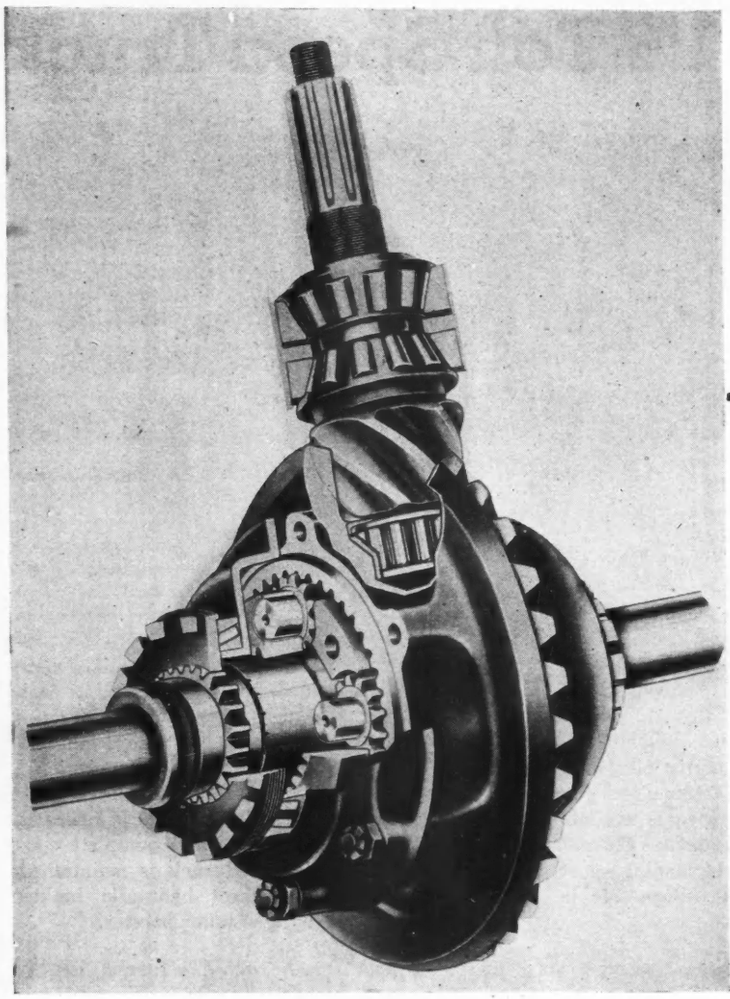
Propane as a refrigerant for trucks was covered by Guy L. Tinkham of the McCord Radiator & Mfg. Co. He outlined the refrigeration-fuel system which his company has developed under Shell patents and concluded that their system, by contrast with other refrigerating methods, "is relatively inexpensive, has no operating expenses, takes up no cargo space, and adds practically no weight. Servicing is negligible, since it is confined to a few valves, with no moving parts in the ordinary meaning of the phrase."

Legislation received heavy emphasis as is its due considering its burdensome effects on highway transport. Major Roy F. Britten, of the National Highway Users Conference, and General H. B. Markham, director of the American Petroleum Institute, threw down a barrage of warnings regarding the objectives of legislative sessions in 44 states next year. Both discussed highway taxation and regulation, and warned the industry to be prepared for attempts to place greater burdens on highway transportation when 44 legislatures meet next year. They said some of the objectives of legislative sessions will be:

Further weight and dimension reductions of commercial vehicles; establishment of ports of entry in most states such as Kansas now has; provision of authority for railroads to buy up highway transport lines; reclassification of motor vehicles for purposes of taxation in accordance with weights and measurements; maximum speed and minimum powerplant limits and compulsory installation of numerous appliances in the name of public safety; increased gasoline taxes and more diversions; requirements that from 30 to 50 per cent of gasoline taxes collected in each state be allotted to the municipalities for street purposes.

James S. Marvin, assistant general manager of the Automobile Manufacturers Association, declared "legislative activities conducted by railroads are futile," and ventured the prediction that "we will find railroads among those recommending repeal of laws that they were instrumental in having enacted."

Ted V. Rodgers, president of the American Trucking Associations, Inc., admitted that some form of permanent control of the trucking industry is inevitable, but he felt the question did not resolve itself to an alternative of Federal regulation or the code. "I am inclined," he said, "to the idea of Federal regulation and the code."



# Eaton Has

***Eaton's two-speed axle gives eight forward speeds and uses two ratios of 5.14 and 7.15 to one, providing greater pulling power and higher top speed at lower engine speed***

A TWO-SPEED axle designed for trucks up to 12,500 lb. gross load and a maximum torque of 165 lb. ft., is announced by Eaton Mfg. Co. of Cleveland. Basically it is a higher capacity modern development of the well-known Ruxtell two-speed axle, which has been sold in considerable quantities and has been in successful operation on lighter trucks.

Installed in a 1½-ton truck, the availability of "faster" ratios when needed impart to such a truck performance factors far exceeding normal performance of the vehicle. This is made possible by using two ratios—at present 5.14 and 7.15 to one—that would, on the one hand, impart to the truck greater pulling power and accelerating ability, and on the other hand, higher top speed at lower engine speed, etc., than with conventional single speed axles with compromise ratios.

With a four-speed gear-box, the axle of course provides a total of eight forward speeds, which with an average truck transmission would run from the 5.14 ratio in direct to between 40 and 50 to one in low.

In operation, the shift seems fairly easy and materially simpler than the shift of the average truck transmission, in spite of the fact that no synchronizers are provided in the axle unit. This ease is probably accounted for by the fact that the transmission mechanism is located between the bevel gear and pinion assembly, and the rear wheels, and that it is of the under-drive rather than the overdrive type, thereby holding maximum speeds of the rotating parts which have to be shifted, down to a low value.

IN design the axle is like a conventional unit except that between the ring gear and differential is interposed a simple planetary reduction mechanism which, when unlocked provided a further reduction ratio from the ring gear to the differential and axle shafts.

The mechanism consists of four planetary gears meshing with an internal gear on the ring gear carrier, these planetary gear in turn also meshing with a sliding gear which can be moved in and out to lock the mechanism or unlock it. In the "unlocked" position, the planetary gears carrier is locked to the differential and turns with it. In the "locked" position the planetary pinions rotate around the locking gear.

Being located between the ring gear and the wheels, permits the use of a lower first reduction ratio than normal. This has the benefit, in addition to reducing engine speed in direct drive, of increasing the size of driving pinion, making for a stronger drive mechanism, than with the conventional compromise axle ratio. Furthermore the use of an under-drive type of arrangement such as this, involves no increase in propellor shaft speed to obtain the greater reductions possible with the two speed axle. There is also no increase in torque on any units of the truck with the exception of the axle shafts when ratios are increased through the planetary mechanism.

No special lubricants are required for the planetary mechanism. As to other details of the axle, the assembly is of the full floating type, with a one-piece cast housing, and axle shafts forged integral with driving flange.

THE pinion is of 5 per cent nickel steel, is straddle mounted, and the bevel gear, with which the planetary internal gear is integral, of 3½ per cent nickel steel both heat-treated and hardened. Axle shafts are 1¾ in. in diameter at the spline, and have a minimum diameter of 1½ in. Planetary sun gear and pinions are of 3½ per cent nickel high carbon steel, heat-treated.

With the use of a two-speed axle, a change speed is also necessary of course for the speedometer drive if this is taken off the transmission. A simpler method however would be to take the speedometer drive off the front wheels.

# 2-Speed Axle for Trucks

## . . . Is Designed for Gross Loads Up to 12,500 lbs. Clutch Actuator Uses Motor Torque to Reduce Pedal Pressure

In operation it would probably be found that the average driver would operate through the planetary gears for get-away, shifting into direct after the truck has reached 30 m.p.h. or thereabouts in high. At speeds in excess of 30 m.p.h. as a matter of fact it will be found that acceleration in the average is better in direct drive than through the planetary mechanism, due to the lower engine speed and higher torque available.

On a good many hills it should also be possible to pull average loads with the transmission in direct, merely by shifting down to the greater axle reduction—involving less total reduction and less power-loss due to friction, etc.

The ability to cut down engine speed at road speeds upwards of 30 m.p.h. should also be reflected in material savings in fuel, etc., as well as wear and tear on engine, transmission, etc.

### Clutch Actuator

ANOTHER device which makes use of motor torque to reduce clutch pedal pressure to a minimum announced by the Eaton Co. is a clutch actuator which not only makes the clutch pedal as easy to operate as the accelerator, but in itself eliminates the necessity for take-up adjustments during the life of the clutch lining.

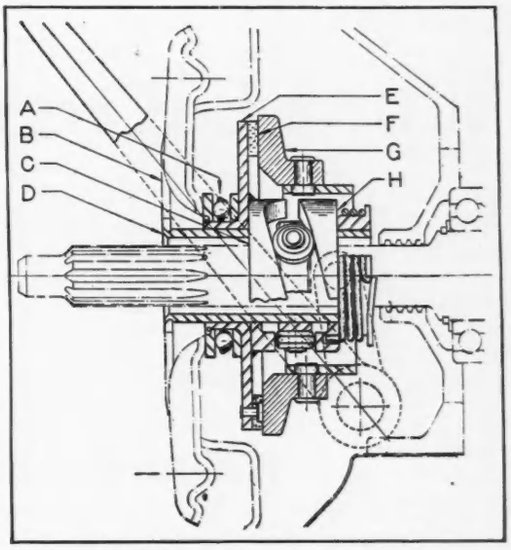
Increasing motor torques on both passenger and commercial vehicles during recent years have made it necessary for manufacturers to either increase clutch sizes, which are limited by clearance considerations, or to increase spring pressure on clutch plates.

The latter solution has been the most widely adopted, but has led to either (1) long pedal travel to overcome pressure by linkage, (1) increased frequency of adjustment requirements due to multiplication linkage, or (3) high pedal pressure, or combinations of all three, in the form of compromises.

The addition of the Eaton Clutch Actuator does not change the actual operating characteristics of the conventional clutch, except that the reduced pressure permitted provides a better means of governing clutch engagement.

The accompanying illustration shows how the unit operates. The major change in the clutch itself—not shown—is that the cover plate stamping "B" is extended inwardly to support the actuator carrying sleeve "D." This sleeve of course is integral with the clutch and rotates at engine speed.

The major parts of the actuator mechanism are the two cams "C" and "H" separated by rollers. The front cam "C" has integral with it a thrust plate "E" provided with friction facing "F". The pressure plate "G" does not rotate but is directly connected to the clutch pedal linkage and moves forward and backward when the clutch is released or engaged.




*The major parts of the clutch actuator are the two cams "C" and "H" separated by rollers. Their operation makes possible continuous follow-up action of the mechanism, automatically adjusting itself to the position of the clutch pedal*

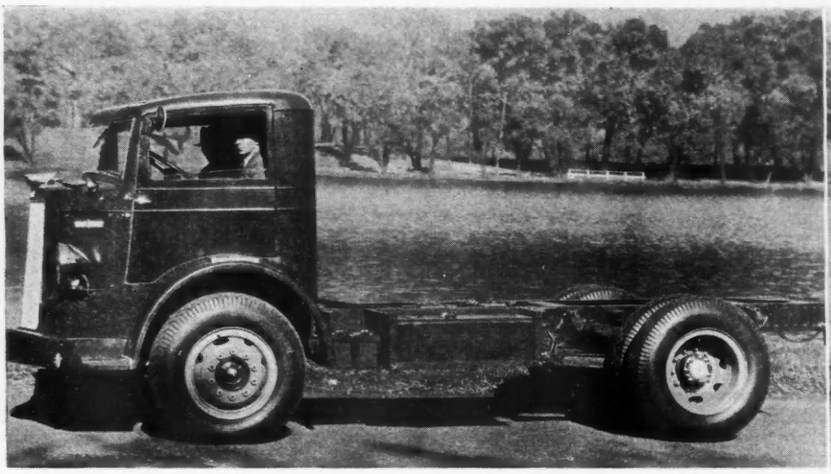
As this plate "G" is moved forward, it engages the friction facing of the plate "E", slowing that plate down slightly. This reduction in speed produces relative motion between the cams "C" and "H", causing the front cam to move forward, carrying the plate "E" with it. It will be seen therefor that there is a continuous follow-up action of the mechanism, automatically and to all practical purposes instantaneously adjusting itself to the positioning of the clutch pedal.

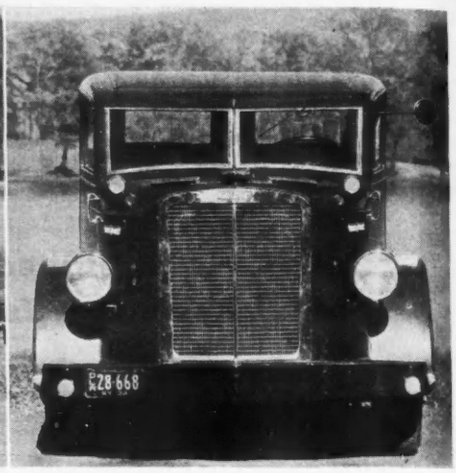
THE reason for the low pedal pressure of course is the mechanical advantage offered by the lead of the cams. The cams are designed to give sufficient lift for clean clutch release and to compensate for outward release lever travel caused by clutch friction facing wear. There is no adjustment to care for in the actuator during the life of the clutch.

The thrust bearing, shown at "A" contacting the clutch release levers is of course in operation only during the time interval that the clutch pedal is in actual motion while releasing or engaging, merely compensating for the slight rotation of the front traveling cam to gain clutch release. It is not therefor to be considered as a release bearing.

When the motor is dead, the actuator of course remains inactive, but clutch release is obtained under these conditions in the normal manner, since the front traveling cam assembly remains free to slide axially on the carrying sleeve. One-third of a revolution of the motor in starting, however, puts the clutch actuator into operation, releasing the pressure.

Periodic lubrication is not required in the actuator.





# Ward LaFrance Cab-Over-Engine

THE Model K, a new cab-over-the-engine truck of 7½-ton nominal rating, is announced by the Ward LaFrance Truck Corp., Elmira, N. Y. It is powered by a Waukesha SRK engine having 517 cu. in. displacement, 335 lb. ft. of torque and a horsepower output of 110 at 2300 r.p.m. The four-wheel internal brakes are air-operated with Westinghouse equipment.

The chassis weight is 9500 lb. and the gross vehicle weight is 30,000 lb. The engine is 6-cylinder with a bore of 4⅝ in. and a stroke of 5⅛ in. A four-speed transmission is standard. The standard wheelbase is 127 in. with varying lengths up to a maximum of 162 in.

The overall height has been kept down giving the truck a very pleasing appearance.

## New Truck Registrations by Makes by Months

| | Autocar | Brockway | Chevrolet | Diamond T | Dodge | Federal | Ford | G. M. C. | International | Mack | Reo | Sterling | Stewart | Studebaker | White-Indiana | Miscellaneous | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **January**.....1934 | 79 | 91 | 8,917 | 406 | 2,581 | 120 | 6,650 | 555 | 2,284 | 161 | 289 | 9 | 61 | 98 | 284 | 318 | 22,903 |
| **January**.....1933 | 47 | 39 | 4,884 | 205 | 360 | 52 | 3,734 | 344 | 983 | 79 | 137 | 12 | 29 | 134 | 287 | 383 | 11,709 |
| **February**.....1934 | 58 | 81 | 10,718 | 420 | 2,723 | 121 | 6,459 | 453 | 2,150 | 144 | 339 | 14 | 60 | 109 | 357 | 270 | 24,476 |
| **February**.....1933 | 41 | 42 | 4,645 | 174 | 348 | 58 | 2,185 | 271 | 1,126 | 62 | 151 | 8 | 31 | 152 | 180 | 233 | 9,707 |
| March.....1934 | 64 | 117 | 15,112 | 501 | 4,154 | 170 | 8,642 | 717 | 2,841 | 145 | 461 | 10 | 67 | 126 | 452 | 315 | 33,894 |
| March.....1933 | 45 | 51 | 4,749 | 202 | 489 | 54 | 2,037 | 318 | 1,201 | 55 | 132 | 5 | 32 | 101 | 174 | 289 | 9,934 |
| **April**.....1934 | 88 | 104 | 15,050 | 534 | 4,367 | 178 | 13,167 | 839 | 2,729 | 206 | 527 | 4 | 90 | 123 | 558 | 318 | 38,882 |
| **April**.....1933 | 76 | 97 | 7,299 | 362 | 870 | 103 | 4,556 | 644 | 2,021 | 137 | 216 | 12 | 40 | 180 | 201 | 487 | 17,301 |
| May.....1934 | 146 | 117 | 14,148 | 508 | 4,441 | 186 | 14,390 | 1,031 | 2,849 | 212 | 578 | 10 | 103 | 193 | 544 | 375 | 39,831 |
| May.....1933 | 106 | 88 | 8,649 | 375 | 1,332 | 138 | 5,665 | 647 | 2,463 | 152 | 290 | 7 | 70 | 205 | 218 | 520 | 20,925 |
| June.....1934 | 95 | 108 | 12,981 | 481 | 3,729 | 196 | 12,205 | 884 | 2,435 | 154 | 504 | 9 | 67 | 133 | 447 | 350 | 34,778 |
| June.....1933 | 113 | 66 | 10,191 | 363 | 1,936 | 99 | 6,080 | 583 | 2,482 | 149 | 278 | 7 | 65 | 184 | 219 | 439 | 23,254 |
| July.....1934 | 99 | 147 | 14,704 | 457 | 4,224 | 182 | 12,492 | 951 | 2,548 | 202 | 416 | 17 | 67 | 156 | 396 | 432 | 37,490 |
| July.....1933 | 137 | 107 | 14,613 | 440 | 2,582 | 171 | 7,058 | 757 | 3,007 | 217 | 381 | 18 | 74 | 198 | 303 | 579 | 30,642 |
| August.....1934 | 61 | 107 | 15,790 | 508 | 4,754 | 162 | 14,055 | 1,033 | 2,809 | 143 | 439 | 15 | 56 | 138 | 337 | 383 | 40,790 |
| August.....1933 | 127 | 82 | 11,455 | 432 | 4,563 | 134 | 6,840 | 667 | 2,981 | 143 | 351 | 3 | 106 | 214 | 241 | 460 | 28,799 |
| September.....1934 | 118 | 74 | 15,159 | 420 | 4,086 | 158 | 12,250 | 1,240 | 2,538 | 103 | 369 | 3 | 31 | 153 | 238 | 285 | 37,225 |
| September.....1933 | 105 | 103 | 14,026 | 473 | 4,316 | 134 | 7,088 | 592 | 3,137 | 135 | 281 | 9 | 70 | 166 | 194 | 440 | 31,269 |
| October.....1934 | 169 | 118 | 15,723 | 535 | 4,669 | 200 | 13,544 | 1,106 | 3,238 | 146 | 364 | 16 | 52 | 212 | 460 | 326 | 40,878 |
| October.....1933 | 94 | 87 | 10,633 | 498 | 4,363 | 159 | 7,113 | 701 | 3,095 | 159 | 298 | 9 | 70 | 149 | 254 | 376 | 28,058 |
| 10 Months.....1934 | 977 | 1,064 | 138,292 | 4,770 | 39,728 | 1,673 | 113,844 | 8,809 | 26,421 | 1,616 | 4,286 | 107 | 654 | 1,441 | 4,073 | 3,372 | 351,127 |
| 10 Months.....1933 | 891 | 762 | 91,144 | 3,524 | 21,159 | 1,102 | 52,356 | 5,524 | 22,496 | 1,288 | 2,515 | 90 | 587 | 1,683 | 2,271 | 4,206 | 211,598 |
| 10 Months.....% Gain | 10 | 40 | 52 | 35 | 88 | 52 | 118 | 59 | 17 | 25 | 70 | 19 | 11 | —14 | 79 | —20 | 66 |

— = decrease

# New Products on Parade

## Descriptions of the Latest Items Put on the Truck Market by Equipment and Specialty Manufacturers

IF the marshal of the New Products Parade could have been permitted one trip around the Automotive Industries Service Show, sponsored jointly by the NSPA, MEMA and MEWA in Cleveland last month and then been allowed to come back to the door and take the fleet operators of the country by their collective hands and show them around he could have provided the operators with a busy and profitable day. But you remember the little boy who got so many things for Christmas that he got excited and when he started to tell the neighbor's children about it he could only remember a bicycle and a drum.

We are a great deal like that little boy. We can remember only a few of the things we saw—but come, let's saunter down the aisles.

### A Clutch Jig

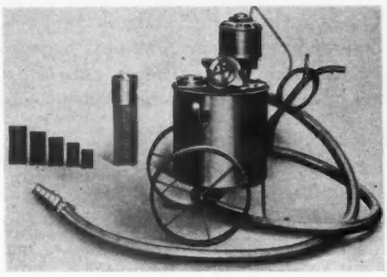
Over here to the right is a clutch rebuilding and adjusting jig. It is a great deal like the one we see in jobber's machine shops only it is not so pretentious or well finished. It sells to the fleet operator for $12.50. Listen closely, the man is telling us about it. It is a little slow but it will do anything on clutches up to 9 in. diameter that any of the more expensive machines will do, and it is down to your price. Burgess Norton Mfg. Co., Geneva, Ill., is the name over the booth.

### Parts Cleaning Tank

That fellow in the corner booth is demonstrating a parts cleaning tank. You put the parts in dirty and they come out in a very few minutes clean and dry. If there is only grease on the parts you do not have to put them in the agitated solution at all. You merely expose them to the vapor above it. If the parts are caked with mud a few minutes in the solution cures that. Cooling coils prevent loss of the cleaning fluid. This machine has been operating for 20 hours. The man is going to filter and measure the cleaning fluid. The machine has used up one gallon in 20 hours' operation. Arco Products Co., Cleveland.

### Kellogg Flusher

If we overrun our next stop perhaps the man will wheel that piece of equipment down to meet us. It is a cooling system flusher on wheels. It is designed to furnish the proper volume and

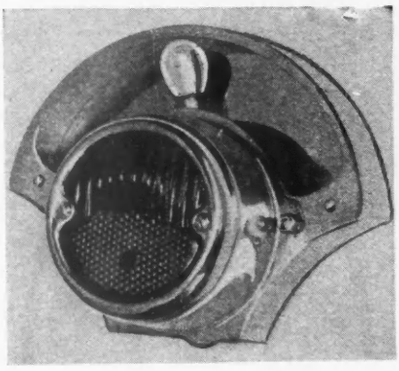


*Cooling system flusher*

pressure for any warm water mixed chemical solution for cleaning cooling systems. It can be operated wherever an ordinary light socket can be reached by that cord. It is arranged for reverse flushing. The label on the equipment is Kellogg Equipment Corp., Rochester, N. Y.

### Swinging Stop Light

Let's see what that swinging red light is. A stop light with motion to make it noticeable. When the brake pedal is depressed the red bulb wigwags over a short arc. The pendulum action is electrically operated. The light is fully protected against water and dust and it requires no more cur-



*Swinging stop light*

rent than an ordinary stop light. Write down the name of the Safety Signal Devices Inc., Chicago, in your book.

### Piston Plating Machine

We turn around and we are facing a tin-plating machine for pistons. The man says tin plating eliminates the breaking-in period, gives a better seal throughout a longer piston life and does much to prevent seizures from any cause. He further tells us that some of the boys are using the plating process to build up undersize pistons but he does not recommend it. If you are taking notes the name is Circo Products Co., Cleveland, Ohio.

### Another Clutch Jig

Our legs need a little stretching so let's walk around—but look here. Another clutch jig. This one is for Chevrolet clutches. When the lever pins wear the holes in the pressure plate oval and the lost motion results in a clutch drag you merely clamp this jig on the pressure plate. The jig holds the reamers in correct alignment and with a few turns you have a round oversize hole. The oversize pins fit the hole size and you have saved the price of a pressure plate. For later reference the name is Accurate Parts Co., Cleveland, Ohio.

### Buz-z-z

Now is your chance to see if you would make a good hotel detective. If you have ears of the size and keenness of a parabola microphone you may hear what this man in the next booth is saying very confidentially to one of his distributors. A new piston ring is to be announced soon. It is not a conventional ring and it is a combination compression and oil control ring. We might as well give up. We are caught in the act of eavesdropping. We will have to wait for more about that one.

### Spring Safety Eye

The U. S. Spring and Bumper Co. of Los Angeles, Cal., is manufacturing the U. S. Spring Safety Eye, a patented spring hanger which employs several spring leaves to absorb the shock now taken by the main leaf. It reduces spring breakage while contributing to better wheel alignment.

# NEW PRODUCTS ON PARADE

## McAleer Quick Drying Enamel

Come away from that refreshment booth. You can buy something to drink when we finish and the time is getting short. Who will give us odds that there is not something new in the next booth? We win. Among other things the McAleer Mfg. Co. man from Detroit shows us is a line of quick drying enamels in 17 colors. All the undercoats necessary for either the brushing or spraying type are part of the line. The paint is durable, the cost is low and it drys to a good lustre without polishing or rubbing.

## Top Cylinder Oilers

Top cylinder oilers are staging a comeback and here is a new one, the Hoffman, made by the Nit-air Valve Oiler Mfg. Corp., Pittsburgh. It is priced at $5.75 complete and it is easy to install, having only two connections. It is made especially for Nit-air Valve Oil. The lubricator works at all speeds and the manufacturers tell you it will increase power, reduce maintenance costs and eliminate carbon deposits.

*Cylinder oiler*

## Helper Springs

The next aisle looks interesting. It leads off with a line of helper springs for light trucks. The springs in each type have two leaves clear to the end of the springs. Rubber blocks are firmly attached to the malleable iron brackets to make the springs silent in operation. The quoted price includes everything necessary for the installation. Easy ride, no sidesway, and reduction in spring breakage are the things achieved by their installation. The sign says Service Spring Co., Indianapolis, Ind.

## Clutch Exchange Service

Here is another one about clutches. The Borg & Beck Co., Chicago, Ill., is starting a factory-rebuilding program for clutch assemblies. You turn in your old one and get a new one in exchange. The old one goes to the factory for rebuilding. The service manager tells us that they do not expect to be able to use much more than the pressed steel cover from the old ones because the rebuilds will carry a new clutch guarantee.

## F-M Con-Rod Bearing

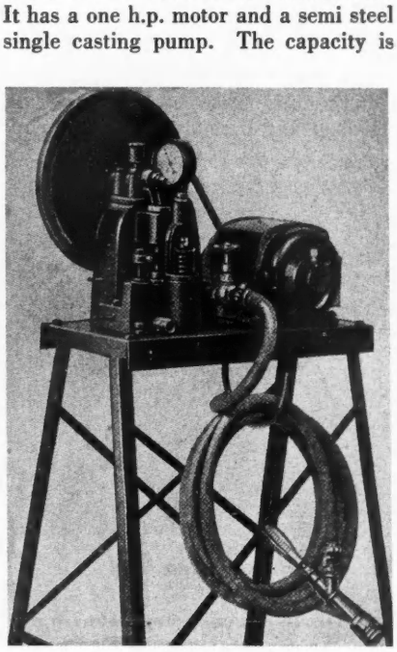
We cannot miss this booth ahead. Every time anyone stops there he gets a nice red carnation pinned on him by one of those two charming girls who never seem to run out of pins or flowers. While we are being decorated we can watch a convincing oil test which shows the result of loose or badly fitted connecting rod bearings. And in a confidential whisper we get a hint of something new still to come. A connecting rod bearing with real silver in it. And cadmium. They are in production now on some of the new cars and will get into the replacement shelves a little later. Thank you, Mr. Federal-Mogul man. The next time we are in Detroit we will stop and see if you have some more details on the new bearing.

## Make Your Own Gaskets

One more and then we will quit but you cannot miss this one. Gasket material by the yard and a set of tools to enable you to cut manifold gaskets in your own shop. The gasket material will fill up the badly machined places in the manifold when it is subjected to heat and the increase in thickness takes care of warping. There is a demonstration of it on an electric waffle iron. If you want full details on making gaskets and information on the material write to the Felt Products Mfg. Co., 1504 Carroll Ave., Chicago.

## Hardie Car Washer

The Hardie Mfg. Co., Hudson, Mich., has a new car washer for small fleets. It has a one h.p. motor and a semi steel single casting pump. The capacity is 3 gal. per minute with 300 lb. pressure. It takes up a space of 20 x 30 in. on the floor and it weighs about 225 lb.



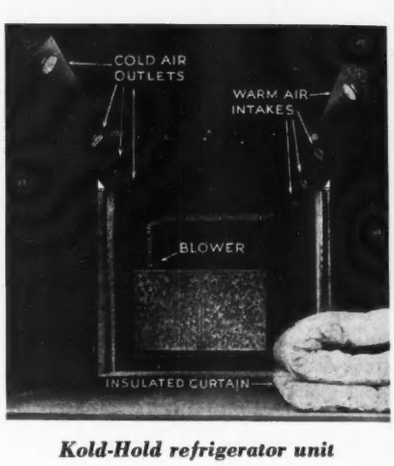
*Hardie washer for fleets*

There goes the siren for closing and we have missed the fan dancer in aisle number three. We have probably missed a lot better things than that too. Our consolation is that your jobber will show them to you when he gets to your town. Let's go back to the office and see what the mailman has brought us in the way of information on new products. Here 'tis:

## Refrigeration for Trucks

The new Kold-Hold forced convection refrigerating system for trucks is ideal for practically all products requiring a temperature of between 35 to 60 degrees.

The system may be adjusted to provide any desired temperature in the 35 to 60 degree range. This temperature is automatically maintained by the thermostatically controlled blowers, and is delivered to all portions of the load with a uniformity varying less than 5 degrees. An important advantage of this new system is that refrigeration can be confined to any portion of the load. This is accomplished by means of a heavily insulated curtain and suitable damper controls in the ducts. In this way it is possible to haul mixed loads at a minimum of refrigerating expense.




*Kold-Hold refrigerator unit*

The Kold-Hold Mfg. Co., Lansing, Mich., claims the system occasions no odors, no drip or muss and no contaminating influence to either the product or the truck body.

Mechanically, the system consists of an insulated housing containing three Kold-Hold cooling units, usually installed in the front end of the body, connected to properly located ceiling ducts through which the air of the body is circulated by means of a thermostatically controlled blower when refrigeration is desired. The Cryohydrate in the unit is frozen by means of either electric or engine driven compressor mounted on the truck, or by hook-up with central plant or compressor located in garage.

## Century Refrigeration

THE Century Electric Co., St. Louis, has recently acquired the entire sales rights to the Whitaker-Upp "Electric Power System" for truck refrigeration.

This system is made up of a constant voltage (115 volt) direct current generator driven through a "V" belt by a truck engine crankshaft. Generated current passes through relays and protective devices to the DC end of a Century dual motor for the propulsion of a refrigeration compressor—also, the evaporator fan motor, if any.

While the truck is idle the AC end of the dual motor operated by 110 or 220 volts house current, is plugged into a receptacle and the refrigeration process is continued.

The system is applicable to trucks, trailers or semi-trailers operating on high or low temperatures, for long or short hauls. Only an electrical connection between tractor and trailer is necessary.

## Bonney Socket Set

KNOWN as No. RH, this set is an assortment of both the standard series (2½ in. square drive) and the heavy-duty series (¾ in. square drive) sockets, handles, and attachments. Fourteen standard series sockets, eight handles and attachments are included as well as 10 heavy-duty sockets, handles and attachments, together with a drag link socket. The set comes packed in a metal chest with removable tray.

## Down-Draft Air Cleaner

DELIVERIES of Model X, a new type of Handy Perfection Air Cleaner, are being made by the Handy Governor Corp., Detroit. The new model is for installation on down-draft carbureters. Two sizes cover all popular cars and trucks.

Employing the exclusive Handy plan of compacted, wire element, the Perfection X passes incoming air through a dense oil fog. All dirt is trapped and returned to a reservoir which holds a pound and a half and seldom requires dumping oftener than once in each 5000 miles. Perfection X efficiency is constant at all speeds and loads.

## Electric Flare

THIS electric lantern is less than 7 in. high and 4½ in. in diameter. It operates on a standard 6-volt battery and is good for

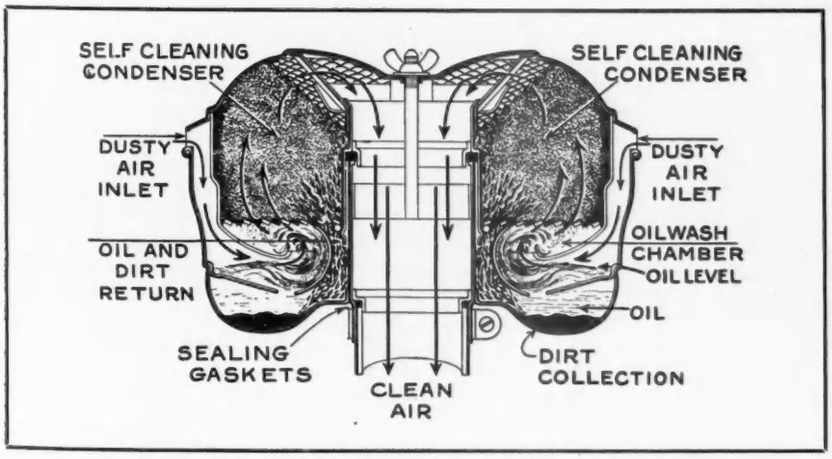
*Delta electric lantern*

more than 40 hours. It is a flashing safety beacon for disabled trucks or emergency crews; is clean in operation giving off no smoke and it cannot blow out. It is made by the Delta Electric Co., Marion, Ind.

## Cold Paint Strip Method

A RECENTLY developed process for removing paint from trucks has already been adopted as standard by several fleet owners.

The method consists of flowing on a cold solution from a pressure tank. After being allowed to remain on the painted areas for 30 minutes, the solution is hosed away with clear cold water, which carries away with it from 3 to 6 coats of paint at a time. Complete absence of fire risk, far less effort and a more complete stripping job is claimed for the new method. Costs are said to be low. The Cold-Strip Method has been developed by Oakite Products, Inc., 22 Thames Street, New York, N. Y.




*Handy down-draft air cleaner for down-draft carbureters*

## Two-Stage Compressors

THE outstanding features of a new line of Two-Stage Compressors are: unusually large, counterbalanced crankshaft; light-weight connecting rods with babbitt cast bearings; both high and low-pressure, light-weight piston of cast-iron provided with three compression rings and one oil return ring.

The crankcase is completely enclosed and dust proof. Cyliner and head castings are of nickel-chrome alloy iron, with large cooling fins. Each valve is enclosed in a separate pocket.

Inter-cooler tube carries air from low-pressure to high-pressure cylinder and is provided with large copper cooling fins, reducing heat to a minimum.

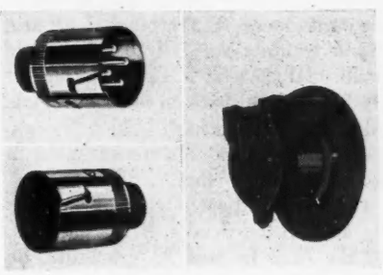
Centrifugal unloader unit is completely enclosed in a crankcase. Compressor is completely unloaded each time it starts, eliminating danger of burned-out motors.

Full particulars can be had from the American Chain Co., Inc., Manley Mfg. Division, York, Pa.

## Electrical Connectors

SPECIAL electrical connectors for use between tractors and trailers for lights and electrically operated brakes are in production by The Pyle-National Co., 1334 North Kostner Avenue, Chicago.

These connectors, consisting of special types of plugs and receptacles, provide



*Electric connectors for trailers*

dependable service, reduce fire hazard and costly maintenance.

They are of weatherproof construction, with bakelite insulation, renewable contacts, and heavy steel shells to withstand severe service. A positive locking device is provided to prevent disconnection due to road shocks. Receptacles have spring covers to protect contacts when the plug is not inserted. Plugs and receptacles carry Underwriter's rating of 20 amperes.

## No. 590 Hydraulic Jack

HERE is a new super service station jack. A big sturdy jack that is low and adapted to present-day cars. The rest plate and wheels are 4 in. high. The highest point of the frame is only 7 in. from the floor, and it has large ball-bearing swivel casters that make it easy to position.

The chassis of the jack is 57 in., with an overall length of 97 in. If you want to know more about this new jack write American Chain Co., Inc., Manley Mfg. Division, York, Pa.

## The Head Man

(CONTINUED FROM PAGE 21)

were not made short enough for Ted's short legs. So he rolled them down, forming an uncomfortable bulge which, in rubbing against his thighs, caused bruises and sores.

Before the mine region claimed Ted as its own, his parents lived in Bayonne, New Jersey. That is where the trucking leader was born, in 1888. The elder Rodgers (Manus) moved his family to Coaldale, Pennsylvania. He also was a miner. The job of feeding all of the little Rodgers was perplexing. There were 10 of them. Ted, being the oldest, naturally felt it his duty to add to the family income.

WHAT a child learns from hard work is how to work hard—an accomplishment not too common. Seven years were spent by young Rodgers underground. Then his kind Irish mother decided that the boy needed some additional schooling. He had gone through four grades of grammar school. So, utilizing some of the precious family savings, she sent him to Philadelphia and enrolled him in the Peirce Business School. By this time Ted had acquired the habit of impatience. He wanted to do things and go places. He still does. Eight months of academic training was all that he could stand, and then he was out looking for a job. He went back to the coal region, this time to the Lehigh Coal & Navigation Co., and became a stenographer in the chief clerk's office.

He learned about mining, rock blasting and all the details of the business. By the time he was 23 years old, he decided to go into business for himself. His boss advised him against it. He warned him that it was precarious, especially for a young man without practical experience. Ted was feeling his business "oats." He did not heed his boss' advice. On the contrary, Ted told him that in his first year he would clear more than his employer's salary. And so it was. Young Rodgers became a rock contractor. He undertook to blast locations for the collieries.

Ted's success in this first business venture gave him courage. He was convinced that he could do things once he determined on his course. He was not wedded to the rock blasting business and soon saw the possibilities in the automotive field. In the neighboring town of Lansford, he acquired the Ford agency and his sales ran high; his profits piled up. Not content with the passenger car business, he aligned himself with the commercial car, the Maccar Company of Scranton. He established an agency in Wilkes-Barre, where he first got an insight into the trucking business.

SQUARE dealing is an attribute that is characteristic of the hard working, hard dragging, dynamic Rodgers. He follows the Antonian theory that "his word is his bond."

One day in Wilkes-Barre he sold a piece of equipment to an operator. After the deal had been completed, the operator met Rodgers and said, "Are you sticking by that deal?"

Rodgers answered in the affirmative.

"Would you stick by it, if I told you you made a mistake?"

"If the mistake was in my favor, I should certainly correct it; but if it was in your favor, it will stand."

"Would it still stand, if it involved considerable money," queried the operator.

"Yep," was the laconic answer.

"Well you have made a $600 mistake, and it is in my favor," the purchaser informed the young truck salesman.

"It still stands."

That was a hard blow to Rodgers, but it paid handsome dividends. That same operator was responsible for Rodgers' selling eight more trucks.

The $600 mistake did not prevent Ted from becoming vice-president in charge of sales of the Maccar Company. It probably had a lot to do with his rise to that position.

Selling trucks took him to Baltimore about 16 years ago and established him in Scranton and Wilkes-Barre. Coincident with the selling of equipment, he realized the possibilities in the parts and tire business, and went into that field. He is still in it, operating under the name of Trexler & Rodgers.

About eight years ago, because of certain notes for equipment that he held, he was more or less forced into the operating end of trucking. He holds a contract with the A & P stores, serving northeastern Pennsylvania and southeastern New York.

His fleet carries code insignia tags A-1 to A-38.

TRUCK association activity was undeveloped in Pennsylvania when Rodgers entered the business. He had learned the value of association work, however, because of his activity in the Kiwanis Club, Knights of Columbus, welfare work and various other civic enterprises. When the Scranton chapter was formed in 1931, as a part of the newly organized Pennsylvania Motor Truck Association, Ted became its secretary.

Truck operators in that state were faced with difficult legislative problems. In the special session, 1932, anti-truck bills crowded the calendar. The Pennsylvania Motor Truck Association was holding its annual election. A search was made for a strong, active leader. Although Ted Rodgers was in Ireland, at the time, visiting the former home of his parents, he was elected to lead the industry and to organize a campaign against anti-truck legislation. Upon his return to this country, he and his associates threw themselves wholeheartedly into the work and accomplished what was believed to have been impossible—the defeat of all the bills.

Rodgers has been president of his state association ever since. His legislative record still stands—100 per cent on all anti-truck bills.

Almost by accident he was plunged into the national picture. He had no idea of assuming any leadership roll in the American Highway Freight Association, which then was being groomed as the national association of truck operators. His only idea in participating in the Washington meetings of that group was to protect the interest of his Pennsylvania members. His forceful personality and sincerity soon asserted themselves and were recognized by other operators.

Under a plan of reorganization of the American Highway Freight Association, he was elected its president. Shortly thereafter, a merger took place, forming the American Trucking Associations, Inc., and Rodgers again was called on to head the industry. He had no idea of the magnitude of the job or the demands it would make on his time and energy. His one idea was to "put it over."

He is no figure-head; no part-time president. To him, running the American Trucking Associations is as much a part of his business as are his several enterprises in Scranton.

As leader of the industry, Ted is "a natural." He has all the qualifications befitting the head of such an industry, not the least of which is his readiness to travel hundreds of miles by plane, rail, bus or auto to attend the meetings of operators.

At the time the code was under negotiation the industry was impatient with the delays preliminary to signature of the code. Approval of the Division Administrator was promised at a certain time. Typing of the documents, however, required longer time than had been expected. The Division Administrator, meanwhile, was required to leave for an extended stay on the Pacific Coast. Unless his signature was affixed, that meant another disheartening delay of three or four weeks.

RODGERS camped at the desk of a typist. When the task of typing was complete, he obtained the official copy, hopped a plane and followed the route

(TURN TO PAGE 58, PLEASE)

# NEWS

## Safety Program for Trucking Industry

### Seek NRA Approval for 5-Point Plan to Make Drivers Safe

A series of recommendations to protect the health and safety of trucking employees, as well as the general public, have been submitted by the industry's National Code Authority to the National Recovery Administration.

After approval of such recommendations by NRA, they will be urged for adoption by the 200,000 members of the trucking industry operating under the code as the first step in a national safety campaign.

The program requires the operators: 1. To eliminate drivers physically, mentally or otherwise unfit. 2. To give physical examinations to all applicants for jobs. 3. To investigate previous experience and driving records of applicants. 4. To instruct drivers of special hazards connected with their work. 5. To instruct drivers in courtesy-of-the-road.

#### Defiance Maps Expansion Program

Defiance spark plugs will hereafter be distributed through regular jobbing channels, according to an announcement made in Toledo by L. L. Siegfried, executive vice-president. This change from direct-to-dealers to jobbers is part of an expansion program. The company has made such progress in the spark plug field that today it ranks third in sales.

#### Plan Truck Show in Chicago

At a meeting held recently in Chicago attended by leading truck men it was proposed to hold a truck show in that city during the week of Feb. 4 to 9, following the annual automobile show. The session was conducted by M. J. Lanahan, president, Chicago Automobile Trade Association. Plans are still tentative.

#### N.A.D.A. Convention

The convention of the National Automobile Dealers Association will be held in Detroit, Jan. 14 and 15. Donald R. Richberg, executive director of the NRA Emergency Council, will speak.

#### Langsdorf Joins Cudahy Packing

George Langsdorf has been appointed garage foreman of the Cudahy Packing Co., Braddock, Pa.

#### Cole and Pretz

R. E. Cole has been appointed executive engineer in charge of Studebaker truck design, and Christian Pretz has been made manager of truck production.

#### Illinois Electric Moves

The Illinois Auto Electric Co. has moved to new quarters at 2101 Indiana Avenue, Chicago.

### Promoted by IHC

**A. W. Scarratt (left), who has been made chief engineer in charge of all International Harvester company's engineering activities, and W. D. Reese (right), who succeeds him as chief engineer of motor truck engineering. Besides supervising engineering developments in motor trucks, Mr. Scarratt will have charge of similar work on McCormick-Deering tractors and stationary and portable power plants. Mr. Reese has been active in motor truck engineering for many years**

**Fowler McCormick, who has been elected vice-president in charge of foreign sales of the International Harvester Co. He formerly held the position of assistant manager of domestic sales.**

### Rate Agreement Amendment Proposed for Truck Code

An amendment designed to incorporate in the trucking code a provision for rate agreements has been drafted and is now being subjected to preliminary discussions between NRA officials and members of the National Code Authority for the trucking industry.

While discussions are being carried on concerning the proposed amendment, operators are still required to file rates which will not be less than cost.

### Reo Names Three

**Left to Right: W. Ward Mohun, who has been appointed special representative for Reo; C. F. Watson, appointed divisional sales manager in charge of Western and Southern territory; Charles Boutelle, appointed manager of Reo Eastern division**

## Truck Sales Up 66% for First 10 Months

### Estimate 12 Month Increase in Sales of 66.3% Over Last Year

With an encouraging 65.9 per cent increase in new truck registrations for the first 10 months of this year over the same period last year and an estimated increase of 69 per cent in registrations for the remaining two months, 1934 definitely stamps itself as the greatest year of production and sales activity since 1930.

Total new truck registrations for the first 10 months of 1934 were 351,127 or 139,529 above the 1933 figure of 211,598 for the same period. The estimated registrations for November of 33,000 and for December of 25,000 brings this figure to 409,000 as compared to 245,869 for 12 months in 1933.

Truck production for the first 10 months of the year total 500,600, an increase of 302,149 over the same period last year. This 10 month figure for 1934 exceeds production for 12 month periods during all years since 1930.

#### Best Year for M-H Company

Marmon-Herrington Co., Inc., reports domestic and export business for the year to be the best in the company's history.

#### Broderick Heads Cartage Exchange

John Broderick of the Broderick Teaming Co., Chicago, was elected president of the Cartage Exchange of Chicago at the annual meeting held Dec. 4.

#### Ford Adopts E-P Lubricants

Adoption of extreme pressure gear lubricants as standard for rear axles of Ford V-8 cars and trucks has been announced by the Ford Company.

#### Kingham Trailer Moves

Kingham Trailer Co., Inc., has moved into new quarters at 15th and Hill Streets, Louisville, Ky.

#### Clyde Starts Diesel Production

The Clyde Motors Products Co., Clyde, Ohio, is reported to have placed orders for materials for the first of the Diesel oil engines the company will manufacture. According to the company these first engines, for truck purposes, are already sold to fleet operators in Ohio and Michigan. Officers of the organization are A. C. Burch, president; E. B. Arnsbarger, vice-president; J. N. Travler, secretary and treasurer.

#### General Motors Appoints Two

John Hancock has been appointed manager of the Memphis zone of General Motors Truck Co., and D. W. Thompson has been made manager of the Nashville zone.

# WE LED WITH A SAFETY PROGRAM, NOT OUR RADIATORS

(Continued from Page 15)

*Philadelphia Coke Co. drivers who took part in the drive for safety*

An inspector gives the driving tests. The truck is stopped on the street, any street at any time, and the helper is told to take the wheel. The inspector may sit in the cab or follow in his car. The test is repeated several times and the inspector makes his report to me. Inspectors are reliable men and their reports are generally taken as final. If the helper is okayed, he is listed as a helper-driver and his appointment as a regular driver is by seniority.

**3.** Installation of a bulletin board and the posting thereon, in addition to general instructions and safety publicity, the reason for discharges and suspension of employees.

Although the bulletin board is a conventional affair, the posting of reasons for discharges and suspensions serve to forestall a feeling of discontent among the men. The company takes this method to present its case for all to read—and judge. It prevents a lot of unfavorable rumors from springing up.

**4.** Payment of truck crews on a combination hourly and tonnage basis, thereby increasing efficiency and resulting in a much higher wage than usually paid in the retail fuel business.

On this plan a driver is guaranteed 66 cents an hour and a helper 56 cents, according to the code. Actually, however, the men receive more through a pay rate based on tonnage which is 60 per cent more than it would be on an hourly basis for an 8-hour day. A normal day's delivery is 15 tons.

**5.** Delivery personnel monthly meetings to discuss safety and to urge drivers to be unceasing in their efforts to promote safety driving and good will among customers.

Monthly meetings were initiated by drivers themselves and are not a company affair. A large part of the meetings are devoted to safety discussions prompted by the management which always attends. Current safety subjects are discussed and the talks may sometimes take the form of constructive criticisms of the men and the management with everyone chinning in.

**6.** Installation of shower room and lockers.

Such conveniences aid in keeping the men fit and rested. As fitness is a primary requisite of safety, this seemingly minor point becomes significant.

**7.** Entrance into the National Safety Council contest with interest aroused by a special bulletin board designed by the management.

This board is an outstanding feature of our safety program. It is, perhaps, the most important. It works like a campaign indicator. A regular clock face is painted on the board with numbers from one to 19. A movable pointer works on a pivot. Around the outer circle of the clock-face, and beside each number, is a slot for inserting cards. At the top of the clock a tag is hung with a number painted on it. This tag number is changed from day to day indicating the number of days since the last accident. When there is an accident, the tag is taken down and the number zero is hung up. The pointer is turned to "one" on the clock, and in the slot beside the first number a card is inserted containing a complete record of the accident. Thus the board gives a complete and graphic account of accidents from month to month. The game is to keep the indicator at zero with no accidents.

At the end of the month the pointer is turned back to zero and the accidents recorded on a chart painted on the board beside the clock-face. The tag is marked "consecutive no accident days" continues from month to month until there is an accident, then it, too, starts at zero again.

**8.** Appointment of a monthly safety committee composed of drivers to aid in safe operation, particularly with regard to unsafe driving practices by certain drivers.

The committee consists of four drivers appointed by me each month. Eventually all the men have an opportunity to serve, thus ill-feeling or a charge of partiality is avoided. It is the duty of the committee to warn reckless drivers who may boast of their escapades among the men. As the management seldom if ever hears of such shop talk (doesn't want to hear it, in fact) it is the duty of the committee to reprimand the men. If the committee's warning is taken too lightly, the matter is brought to my attention and the difficulty is thrashed out publicly. This committee fulfills a vital function in safety operation. All disciplinary measures are decided by me.

**9.** Awarding of truck crew commendations for safe operation of trucks for a period of one year. The commendations are small plates tinted silver and gold. The driver's or helper's name is engraved on the plate, which certifies that the man holds a no accident record for one year. The plate serves as

(Turn to Page 63, Please)

Date 193__ **Philadelphia Coke Co.** Truck No. ____

**DRIVER'S INSPECTION REPORT**

MARK X AFTER THE FOLLOWING FOR REPAIRS
GIVE ADDITIONAL INFORMATION UNDER "REMARKS"

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Motor | | Steering | | Fenders | | Mileage Recorder | |
| Trans. | | Horn | | Wheels | | Fire Extinguisher | |
| Brakes | | Muffler | | Springs | | Lack Power | |
| Clutch | | Radiator | | Body | | Leak Anywhere | |
| Rear | | Lights | | W. Shield Cleaner | | Tires O. K. | |

Remarks

What is Your Tonnage?

Mileage In ____
Mileage Out ____
Elapsed ____

Driver's Signature ____

— GARAGE REPORT —

| MECHANIC | DATE COMPLETED |
|---|---|
| LABOR — HOURS | INSPECTED |

*This report is filled and turned in every day*

## COMMERCIAL CAR JOURNAL'S

# TRUCK SPECIFICATIONS TABLE

***The Commercial Car Journal's Truck Specifications Table is brought up to date in each issue from data supplied monthly by truck manufacturers***

●

## KEY TO ABBREVIATIONS AND REFERENCE MARKS

### GENERAL

**Chassis Price**—Chassis price quoted applies to the standard wheelbase and specifications listed. All prices are F.O.B. factory.

**•••**—List price not yet established. Ready next issue.

**Tonnage Rating**—Where a spread of ratings is given the maximum ratings are for ideal operating conditions and the minimum for extremely difficult conditions; the ranges between are for varying operating conditions.

**Gross Vehicle Weight**—Is chassis weight, plus body and cab, plus payload. Gross vehicle weight given for a model is based on maximum recommended tire size and not on tires listed as standard equipment.

**Chassis Weight Stripped**—Includes gas, oil and water and all things included in chassis price. Does not include the weight of cab.

**Maximum Brake H. P. at Given R.P.M.**—Is actual dynamometer reading without accessories.

**Tractors**—Unless given the designation N (meaning not available as tractor), all standard models may be assumed to be available as tractors.

(A) All Torque and Brake Horsepower values listed are based on engine outputs with all Standard Equipment Accessories running and are the same values obtaining with the truck on the road in actual operation.

(N) Not available as tractor

(T) This designation accompanying a model number indicates vehicle is specifically designed for tractor use only.

**c. o. e.**—Cab-over-engine design.

(3) **Corbitt**—Larger engines and corresponding auxiliary units provided on all models at extra cost.

(4) **Day Elder**—Model 75—1½ ton—same specifications except price—$945, and larger tire size—B6.00/20 front and DB6.00/20 rear.

(5) **Dodge**—F-61 available as special tractor truck with 146-inch wheelbase with model designation of F-60, at $2645. K-61 available as special tractor truck with 146-inch wheelbase with model designation of K-60, at ***.

**(5a) Dodge**—Model H20, ¾-1 ton, gross vehicle weight 6,000 lb., price $502, has same specifications as H30 except tires which are 7.50/17 and lighter rear springs.

(6) **General Motors**—Models T-18 to T-61 inclusive are also available for export only as coach chassis. Double reduction axles optional at extra cost in Models T-43, T-43T, T-51, T73H and T-74. Worm type axles optional at price deduction in Models T-61, T-75T, T-75, T-75H and T-83. Chassis prices and weights on all cab-over-engine models include the cab. A complete line of superheavy duty models designated T-85 series (4-wheel) and T-95 series (6-wheel) custom-built to exactly meet customer's requirements are available with a range of axles, wheelbases, engines, transmissions, etc.and prices will be quoted upon application.

**Gramm**—Larger engines and corresponding auxiliary units provided on all models at extra cost when type of service demands. Wheelbases and body mounting dimensions may change to suit special requirements. Double reduction axles available on all models except AX and BX.

Gross weight indicated for each model in the table is the straight rating. Series CXH is supplied with Hercules JXB engine in Model CXHB and Hercules JXC in Model CXHC.

**(7) Grass Premier**—Eight cylinder engines available on following models: 835 with Lyc. GU at $1515 list; 865 with Lyc. HF at $4230; 875 with Lyc. AE at $5400.

**(8) International Harvester**—A-1, ¾ ton, same as A-2 except less spring leaves and smaller tires.

**(9) Le Moon**—Model 600 available with Lyc. AEC at same cost. Models 701 and 801 available with Waukesha 68RL at same cost.

**(10) Sterling**—Rocker arm used in place of springs

**(D) Sterling**—Diesel Equipped.

†**Reo**—Model 1D is the longer wheelbase edition of Model 1B. The frame dimension is 7x2¾x⅛. It is furnished at extra cost.

††**Reo**—2J, 2K same as 2H except 166 in. wheelbase and price of $1695.

††**Reo**—3J same as 3H except wheelbase of 170 in. and price of $2085; 3K same as 3H except 185 in. wheelbase and price of $2155. 3M same as 3H except 205 in. wheelbase.

**(11) Studebaker**—S-2 in 141 in. and 165 in. wheelbases has 6⅛ in. frame depth.

**(12) White**—Each model shown is furnished with different specifications for different tonnage ratings.

*—Factory governed speed 2400 r.p.m.

**(12a) White**—Special prices for each installation.

**(13) Marmon-Herrington**—Available with Hercules Diesel engine. Price on application.

(14) **Ford**—Rear axle ratios 5.14 and 6.6 optional on 1½-ton trucks.

**(15) Mack**—Chassis price and weight include cab

**(16) Biederman**—Will furnish Continental, Hercules, Waukesha and Lycoming engines at the buyer's option.

**(17) Moreland**—All Moreland models available with Waukesha engines and as six-wheelers with dead axle.

**(18) Walker**—Frame lengths may be changed, within limits, to suit individual requirements, at no additional cost.

### MAKES—ALL

**AB**—American Bosch.
**A LaF**—American La France.
**AL**—Auto Lite.
**B**—Bendix.
**BB**—Borg & Beck.
**BL**—Brown-Lipe.
**BO**—Bendix front, Own rear.
**Blo**—Blood.
**Bu or Bud**—Buda.
**BW**—Borg Warner
**BWs**—Bendix front, Westinghouse rear.
**C or Col**—Columbia.
**Car**—Carter.
**Ch**—Chicago.
**Ci**—Ignition by compression.
**Cl or Cla**—Clark.
**Cle**—Cleveland.
**Co**—Covert (transmission).
**Co**—Covert (clutch)
**Con**—Continental.
**Cot**—Cotta Gear.
**Cum**—Cummins-Diesel
**Det**—Detroit Lubricator.
**DG**—Detroit Gear and Machine.
**DR**—Delco Remy.
**Eat**—Eaton.
**Ei**—Eisemann.
**En**—Governor built in engine
**EV**—Electro-Vac (gov.) Pierce.
**Fe**—Fedders.
**Fu**—Fuller.
**Ge**—Gemmer.
**GO**—G. & O.
**Ha**—Handy (governor).
**Ha**—Hannum (steering gear).
**HaS**—American Car & Fdry.
**Her**—Hercules.
**Hr**—Harrison.
**HS**—Merchant & Evans (clutch).
**HS**—American Car & Fdry. (governor).
**Jac**—Saginaw.
**Jo**—Jones.
**KP**—Handy.
**L**—Lockheed.
**Li**—Lipe, W. C.
**LN**—Leece Neville.
**Lo**—Long.
**LO**—Lockheed front, Own rear
**LW**—Lockheed front, Wisconsin rear.
**Lyc**—Lycoming.
**Mc**—McCord.
**Ma**—Marvel.
**ME**—Merchant & Evans.
**MM**—Mechanics Mach.
**Mo**—Modine (radiator).
**Mo**—Monarch (governor).
**My**—Mallory.
**NE**—North East.
**No**—Not supplied.
**ns**—No Standard.
**O or Ow**—Own.
**Op or Opt**—Optional.
**Pe**—Pierce (governor).
**Pe**—Perfex (radiator).
**PS**—Peters & Snead.
**RB**—Robt. Bosch.
**Ro**—Rockford.
**Ros**—Ross.
**Sc**—Scintilla.
**Sch**—Wheeler-Schebler.
**Shu**—Shuler.
**SpB**—Spicer and Blood
**Spi**—Spicer.
**Ste or St**—Sterling.
**Sto.-Bat.**—Storage Battery
**Str**—Stromberg.
**Til**—Tillotson.
**T or Tim**—Timken.
**TWH**—Timken Wisconsin Herrington
**WG**—Warner Gear.
**Wa**—Waukesha (governor).
**Wau**—Waukesha.
**W or Wis**—Wisconsin.
**Ws**—Westinghouse.
**Yo**—Young
**Zen**—Zenith.

### BRAKES—SERVICE

#### Location

**2**—Two Wheels, rear only.
**2/4**—Two-wheel brakes effective on all four wheels through driveshaft.
**4/6**—Brakes on four rear wheels effective on all wheels through driveshaft.
**T/4**—Brake on transmission effective on all four wheels through driveshaft.
**4**—Four Wheels, front and rear
**4r**—Four Wheels, rear only.
**6**—Six Wheels, front and rear.
**J**—Jackshaft.
**P**—Propeller shaft.

#### Type

**I**—Internal.
**X**—External.

#### Operation

**A**—Air.
**D**—Hydraulic and mechanical.
**H**—Hydraulic.
**M**—Mechanical.
**V**—Vacuum.

### BRAKES—HAND

#### Location

**C**—Center of double propeller shaft.
**2**—Rear wheels.
**4**—Four wheels.
**R**—Worm or bevel gearshaft.
**T**—Transmission.
**F**—Driveshaft.

#### Type

**D**—Tru-Stop disk.
**I**—Internal.
**X**—External.

### BRAKE DRUMS

#### Material

**a**—Cast alloy iron.
**A**—American Car Fdry.
**C**—Centrifuse.
**D**—Dayton.
**E**—Ermalite.
**G**—Gunite.
**H**—Hunt Spiller.
**c**—Cast iron.
**p**—Pressed steel.
**P**—Pressed steel.
**s**—Cast steel.
(Where a combination of any of the above is used, the first reference mark applies to the front and the second to the rear drums.)

### CLUTCH

#### Type

**D**—Multiple disk.
**dp**—Double plate.
**O**—Plate in oil.
**P**—Single plate.

### ENGINE

#### Valve Arrangement

**F**—Inlet valve in head; exhaust valve at side.
**H**—In head.
**L**—"L" head, valves at side.
**T**—Inlet and exhaust on opposite sides.

#### Camshaft Drive

**C**—Chain.
**G**—Gear.

#### Piston Material

**A**—Aluminum alloy.
**B**—Semi-steel.
**C**—Cast iron.
**N**—Nickel iron.
**S**—Aluminum alloy with strut.

#### Main Bearings

**r**—Rear main bearing.

#### Oiling System

**CC**—Pressure to main, connecting rod and camshaft bearings.
**FP**—Pressure to main, connecting rod camshaft bearings and piston pins.
**PC**—Pressure to mains and connecting rod bearings.
**PO**—Pump, gravity and splash.
**PS**—Pressure with splash.

### FRAME

#### Type

**I**—"I" Beam.
**C**—Channel.
**T**—Channel tapered front and rear.
**L**—Channel reinforced with liner.
**B**—Channel reinforced with both liner and fishplate.
**P**—Channel reinforced with plate.
**TL**—Channel tapered front and rear reinforced with liner.
**D**—Drop Center.
**Tf**—Tapered front.
**X**—x-Braced.

### FUEL SYSTEM

#### Fuel Feed

**E**—Electric pump.
**G**—Gravity.
**M**—Mechanical pump.
**P**—Pressure.
**V**—Vacuum.
**B**—Bosch.
**C**—Cummins.

### REAR AXLE

#### Final Drive and Type

**B**—Bevel.
**C**—Chain.
**D**—Dead.
**F**—Full-floating.
**2**—Double Reduction.
**S**—Spiral bevel.
**W**—Worm.
**w/2**—Worm or Double Reduction Optional.
**½**—Semi-floating.
**¾**—Three-quarter floating.

#### Drive and Torque

**A**—Radius Rods and Torque Arm.
**H**—Hotchkiss. (springs)
**R**—Radius Rods
**T**—Torque Arm.
**U**—Torque Tube.

### SPRINGS

#### Auxiliary Type

**½**—Semi-elliptic above or below main springs.
**¼**—Quarter elliptic.
**C**—Coil spring.
**N**—No.
**O**—Optional.

### TIRES

**B**—Balloon.
**DB**—Dual Balloons.
**P**—High Pressure Pneumatics.
**DP**—Dual High Pressure Pneumatics.
**S**—Solids.
**DS**—Dual Solids.
**°**—Pneumatics at extra cost.

### TRANSMISSION

#### Location

**A**—Amidships.
**J**—Unit with jackshaft.
**U**—Unit with engine.

#### Auxiliary Location

**No**—Not furnished.
**O2**—2 speed axle unit optional at extra cost.
**Op**—Optional at extra cost.
**A**—Amidships.
**R**—Rear of amidships main transmission
**U**—Unit with engine.

### WHEELS DRIVEN

**2C**—Center pair of rear wheels
**2R**—Rear pair of rear wheels.
**4F**—Front and center pair of rear wheels.
**4R**—Four rear wheels.
**6**—Six wheels.

# Specifications Are for New Models Announced This Month—A Complete

**NOTICE—The policy of Commercial Car Journal now is to publish complete specifications of all current truck models in the January, April, July and October issues. These quarterly listings correspond to the big seasonal truck buying periods.**

**In the intervening months will be published the specifications of all new models that are brought out. (Just as you see them on this page.) In addition, so that there may be a public record available at all times of**

| Line Number | MAKE AND MODEL | GENERAL (See Keynote) | | | | | | TIRE SIZE | | ENGINE | | TRANSMISSION | | | REAR AXLE | | | | FRAME | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Tonnage Rating | Chassis Price | Standard Wheelbase | Max. W. B. Furnished | Gross Vehicle Weight | Chassis Wt. (Stripped) | Front | Rear | Make and Model | No. of Cylinders, Bore and Stroke | Make and Model | Location, Forward Speeds | Aux. Location and Speeds | Make and Model | Gear and Type | GEAR RATIOS: Drive & Torque | GEAR RATIOS: In High | GEAR RATIOS: In Low | Side Rail Dimensions | Type |
| 1 | Autocar.....TS | 10 | 6600 | 204 | 204 | ..... | 10823 | B10.50/24 | DB10.50/24 | Own SCM | 6–4½x4¾ | Own T | U 4 | No | Own TG | 2F | H | 8.68 | 55.0 | 10½x3x$\frac{7}{16}$ | P |
| 2 | .....UNFS | 7½ | 5600 | 145 | 145 | ..... | 9585 | B10.50/20 | DB10.50/20 | Own SCH | 6–4¼x4¾ | Own T | U 4 | No | Own TF | 2F | H | 7.20 | 45.6 | 9x3x¼ | P |
| 3 | .....UTS | 10 | 6600 | 145 | 145 | ..... | 10927 | B10.50/24 | DB10.50/24 | Own SCM | 6–4½x4¾ | Own T | U 4 | No | Own TG | 2F | H | 8.68 | 55.0 | 10½x3x$\frac{7}{16}$ | P |
| 4 | G-P.....545 | 3–4 | 2400 | 130 | 176 | 18000 | 5575 | B7.50/20 | DB7.50/20 | Wau 6BK | 6–3¾x4¼ | Fu 5A290 | U 5 | No | Tim 56200H | SF | R | 6.10 | .... | 8x¼x3½ | T |
| 5 | .....555 | 4–5 | 3600 | 130 | Op | 20000 | 6100 | B8.25/20 | DB8.25/20 | Wau 6-110-3 | 6–4x4¾ | Fu 5A380 | U 5 | No | Tim 58200H | SF | R | 7.40 | .... | 9x¼x4 | T |
| 6 | .....565 | 5–7 | 4400 | 136 | Op | 25000 | 8465 | B9.00/20 | DB9.00/20 | Wau 6-110-3 | 6–4x4¾ | Fu 5A380 | U 5 | No | Eat | 2F | R | 8.50 | .... | 10x¼x4 | T |
| 7 | .....575 | 7–10 | 5400 | 136 | Op | 30000 | 9450 | B9.75/20 | DB9.75/20 | Wau 6-125-4 | 6–4⅜x5½ | Fu 5A53 | U 5 | No | Wis | 2F | R | 9.10 | .... | 12x¼x4 | T |
| 8 | Ward La F.(c.o.e.)K | 7½ | 5890 | 127 | 162 | 30000 | 9500 | B9.75/20 | DB9.75/20 | Wau SRK | 6–4⅝x5⅛ | BL 5341 | A 4 | No | Tim 75733 | 2F | R | 6.85 | 45.5 | 12x3¼x¼ | T |
| 9 | .....75CW-T | 15 | 8000 | 164 | Op | 50000 | 11400 | B10.50/20 | DB10.50/20 | Cu. Die. HA | 6–4⅞x6 | BL 7351 | A 4 | No | Tim 76733 | 2F | R | 7.33 | 46.2 | 14x3¼x¼ | T |
| 10 | .....100CW-T | 20 | 9000 | 164 | Op | 60000 | 11700 | B10.50/22 | DB10.50/22 | Cu. Die. HA | 6–4⅞x6 | BL 7351 | A 4 | No | Tim 79720 | 2F | R | 7.97 | 50.0 | 14x3¼x¼ | T |
| 11 | Willys.....77 Panel | 750 lbs. | *** | 100 | 100 | 2225 | 1584 | B5.25/17 | B5.25/17 | Own 77 | 4–3⅛x4⅜ | Own 77 | U 3 | No | Own 77 | S½ | H | 4.3 | 12.5 | 3¾x1¾x$\frac{7}{16}$ | T |

## Makers' Changes in Specifications

## Published in October

**AUTOCAR**—Is model 6T; was model TE. Is model 6UT; was UTE. Models UT and 6UT, Front axle is Tim 26450; was Tim 27450.

**CHEVROLET**—Model Comm'l, Chassis Wt. is 2105; was 2110. Model Utility, 131-in. whlbse. Chassis Wt. is 3015; was 2995. Model Utility, 157-in. whlbse. Chassis Wt. is 3060; was 3100.

**DIAMOND T**—Model 243 Std. Whlbse. is 155; was 137. Model 227, Rear Axle Make is Cla B473; was Cla B410. Model 211A Gear Ratio in Low is Opt. Models 311C, 312, 351C, 352, 412B, 512B, 412DR, 512DR, Governor Make is Le; was Ha. Model 243 Cab to rear of frame is 126; was 96. Cab to rear axle is 72; was 54.

**FEDERAL**—Model 18X Engine Make is Her JXB; was Her JXA. Engine Bore is 3⅝; was 3⅜. Rear axle Make and Model is Tim 53303; was Cla B484. Gear ratio in high is 5.83; was 6.38. In low is 37.3; was 40.8. Piston displacement is 263; was 228. Compression ratio is 5.4; was 4.7. Torque lb. ft. is 164; was 149. NACC rated HP is 31.5; was 27.3. Max. brake HP is 67 at 2600; was 61 at 2500. Models 15, 15X, 18X Front axle make is 30020H; was Cla F274. Lining area is 223; was 250. Model 15X piston Material is C; was A. Model 25 Rear Axle Make and model is Cla B642; was Cla B640. Gear Ratio in high is 6.43; was 6.38. In low is 45.5; was 45.2.

**HAHN**—Model HB5, Tire Size front is B8.25/20; was B7.50/20. Rear is DB8.25/20; was DB7.50/20. Model HB6, Tire Size front is B9.00/20; was B8.25/20. Rear is BD9.00/20; was DB8.25/20. Model 300 Tire Size front is B9.75/20; was B9.00/20. Rear is DB9.75/20; was DB9.00/20. Model HB6, transmission make is Fu 5A290; was Fu MLUSP. Model 300, transmission make is Fu 5A380; was Fu MCU16.

**HENDRICKSON** — Model 15SA, Chassis price is $1760; was $1680.

**HUG**—Models 42A and 70, Compression ratio is 4.8; was 4.7.

**LAFR. REPUBLIC** — Model H5, Engine cubic inch displacement is 404; was 354. Compression ratio is 6.4; was 4.3. Torque lb. ft. is 252; was 228. NACC HP rating is 43.4; was 36.2. Brake HP is 82 at 2000; was 86 at 2300. Model M3, transmission make is Fu5A530; was Fu VUOG.

**MACK**—Model BX, price $5600, Engine is Own AB; was Own BX. Gear ratio in high is 5.05; was 7.01. Model BX Price $5750; gear ratio in high is 5.67; was 7.88. Model BM gear ratio in high is 5.05; was 7.01. Model AC price is $6800; was $6450. Model AP Frame side rail dimensions is 8⅝ x 3 x 5/16; was 8 x 3 x 5/16. Models AK, AC and AP Frame type is T; was C. Model AP Piston Material is C; was S. Models AK price $5250 and AC price $5750. Main bearing length is 10½; was 10 11/16. Model BX-S Main bearing length is 12 9/16; was 13 5/16. Governor make is Pe; was Ha. Model BM Brake lining area is 537; was 551. Model AC price $5750. Cab to rear of frame is 159; was 150. Cab to rear axle is 111; was 102. Model AC price $6800 and model AP Rear springs are 50 x 5; was 52 x 4. Model BX-S Auxiliary type is ½; was N.

**MORELAND** — Model R11H, Rear axle make is Tim 53300; was Tim 53200.

**REO**—Are models 1B4, 1D4; were 1B, 1D. Standard whlbse. is 139 in.; was 140. Max. whlbse. is 166 in.; was 164. Chassis wt. is 3215; was 3260. Tire size rear is B600/20; was DB600/20. Side rail dimensions is 7 1/16 x 2⅜ x 7/32; was 7 x 2¾ x 5/32. Main bearings diameter is 2⅝; was 2 5/16. Cab to rear of frame is 99½; was 102; Cab to rear axle is 57½; was 60; Front springs are 36 x 1¾; were 40 x 2. Rear springs are 48 x 2¼; were 50 x 2½. Is model 2B4-204; was 2B-2D. Front springs are 36 x 2¼; were 40 x 2½. Rear springs are 50 x 2½; were 52 x 2½.

**STUD.**—Model W 841 Transmission make is ClaR910; was Cla R 900. Model T 641 Front axle make is Tim 31020; was Tim 31010.

# Listing of All Trucks in Current Production Will Be Given in January

the minor changes made in current models, these changes will be published monthly as below.

The next complete listing will appear in the January number.

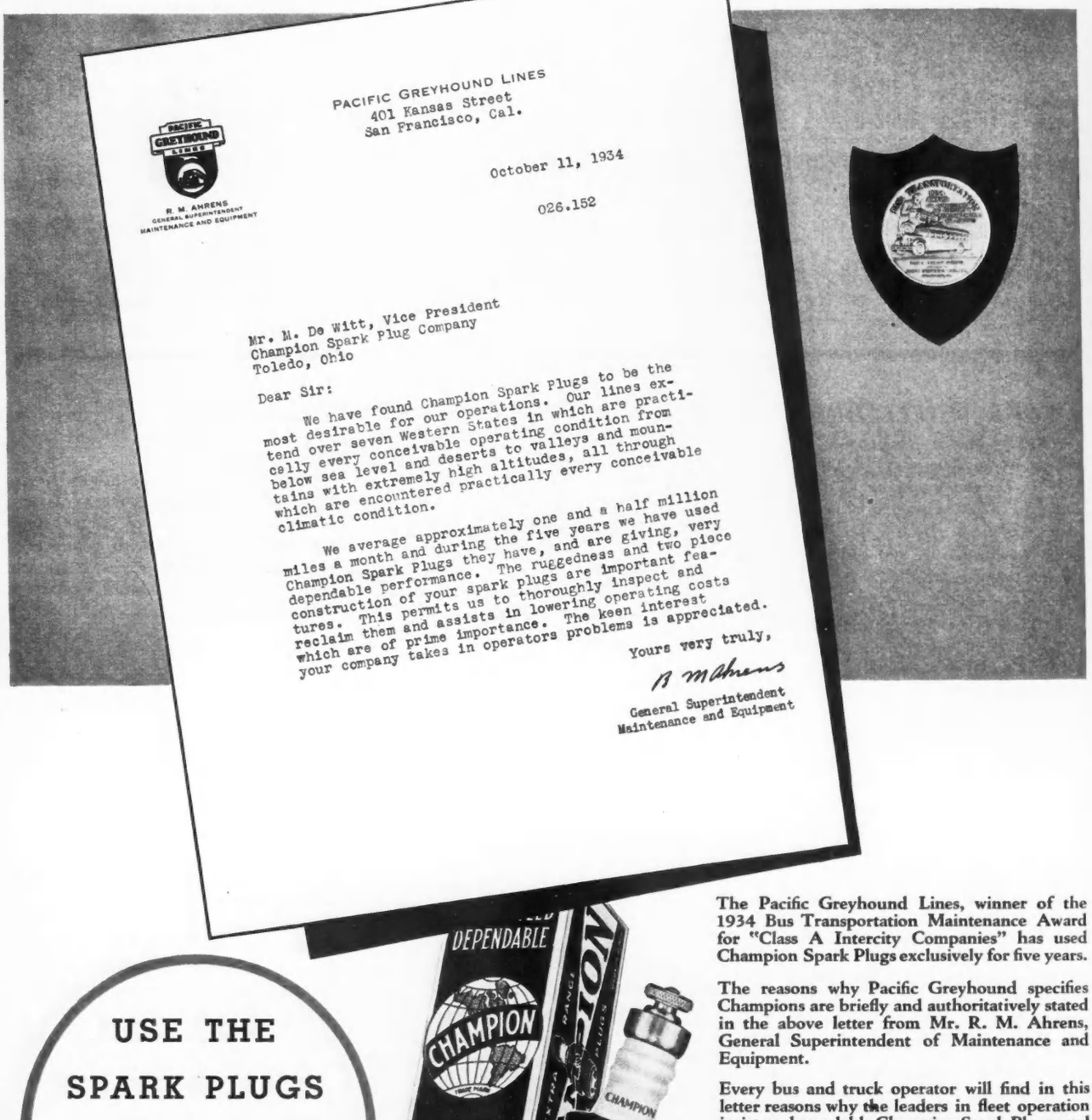
Publishing experience has shown that 60 per cent of the changes are made regularly in the four quarterly issues chosen for the complete listings. An increase in this percentage is anticipated, and it is confidently expected that the reference value of the Specifications Table will not be impaired.

| | ENGINE DETAILS | | |

# PACIFIC GREYHOUND LINES

## Wins Bus Transportation Maintenance Award

## using Champion Spark Plugs



PACIFIC GREYHOUND LINES
401 Kansas Street
San Francisco, Cal.

October 11, 1934

026.152

R. M. AHRENS
GENERAL SUPERINTENDENT
MAINTENANCE AND EQUIPMENT

Mr. M. De Witt, Vice President
Champion Spark Plug Company
Toledo, Ohio

Dear Sir:

We have found Champion Spark Plugs to be the most desirable for our operations. Our lines extend over seven Western States in which are practically every conceivable operating condition from below sea level and deserts to valleys and mountains with extremely high altitudes, all through which are encountered practically every conceivable climatic condition.

We average approximately one and a half million miles a month and during the five years we have used Champion Spark Plugs they have, and are giving, very dependable performance. The ruggedness and two piece construction of your spark plugs are important features. This permits us to thoroughly inspect and reclaim them and assists in lowering operating costs which are of prime importance. The keen interest your company takes in operators problems is appreciated.

Yours very truly,

R M Ahrens

General Superintendent
Maintenance and Equipment

USE THE SPARK PLUGS CHAMPIONS USE

NRA CODE
APEM 34-01

The Pacific Greyhound Lines, winner of the 1934 Bus Transportation Maintenance Award for "Class A Intercity Companies" has used Champion Spark Plugs exclusively for five years.

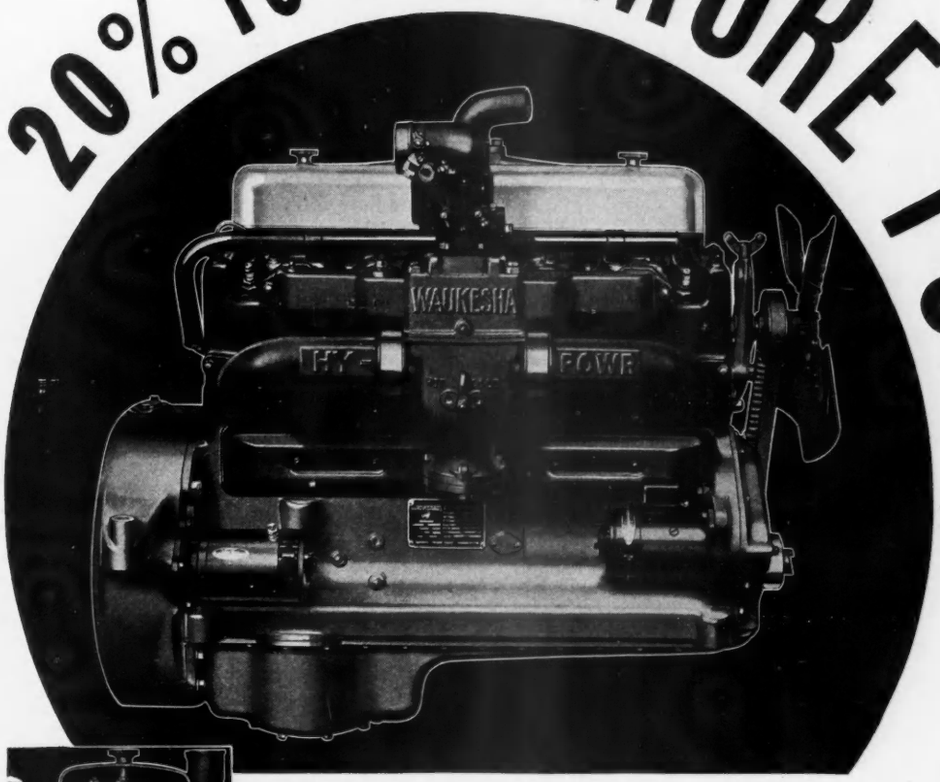
The reasons why Pacific Greyhound specifies Champions are briefly and authoritatively stated in the above letter from Mr. R. M. Ahrens, General Superintendent of Maintenance and Equipment.

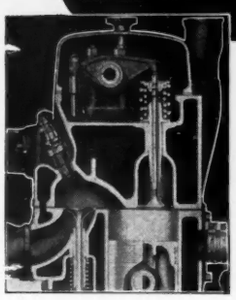
Every bus and truck operator will find in this letter reasons why the leaders in fleet operation insist on dependable Champion Spark Plugs, and why all owners and operators of trucks and buses interested in maximum performance and lowest maintenance costs, should prefer Champions.

CHAMPION SPARK PLUG COMPANY
TOLEDO • OHIO

CHAMPION
EXTRA-RANGE SPARK PLUGS

# 20% TO 30% MORE POWER



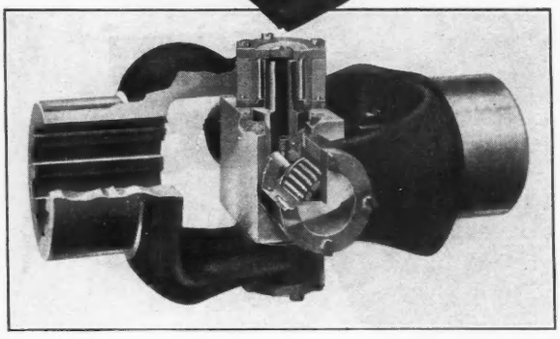



## WITH UTMOST ECONOMY

DESIGNERS—here's a new six-cylinder power plant for motor trucks and coaches. So conservatively rated and so efficient that it is no longer necessary to meet present markets by a compromise. No longer need a pygmy engine be put on a man-sized job. • It has the Waukesha Hy-Powr combustion chamber... the most important gasoline engine development in years . . . exclusively Waukesha. Result—power is increased 20% to 30%... with an equal saving in weight and size. Cooling is improved . . . valves and seats last longer. The engine runs smoother. Fuel consumption is reduced. Improved materials assure long life. • Write today for Bulletin 887. Waukesha Motor Company, Waukesha, Wisconsin.

# WAUKESHA ENGINES

30 Years of Specialization Are Embodied in this New Line of Ton-Safe . . . Roller Bearing Universal Joints



★ In keeping with the trend toward constant improvement in automotive units, Blood-Brothers are pleased to present a complete line of heavy duty, single and double universal joints and propeller shaft assemblies of the roller or anti-friction bearing type, known as the W series.

The design of the W series joint closely follows that of its predecessor, the Model BW, except for the incorporation of the roller type of bearing. The same yoke design is used, and basicly the center cross design is the same. The result is the incorporation of all the ruggedness and simplicity of the well-known Model BW, plus the addition of frictionless bearings, better lubricant retention, increased capacity and smaller rotating diameter.

***Investigate*** Blood-Brothers Ton-Safe Universal Joints, and ask us to estimate on your requirements.

**BLOOD-BROTHERS MACHINE COMPANY**

**Allegan, Michigan.**


## The Head Man

(CONTINUED FROM PAGE 46)

of the Division Administrator. He got off at McKeesport, Pennsylvania, only to learn that the train he was trying to catch made no stop at McKeesport. Ted enlisted the assistance of one of his friends in Pittsburgh and through him had the train stopped. It was then past midnight. Early next morning he presented himself in the washroom to the Division Administrator, who looked at Ted with astonishment.

"What are you doing here?" he asked.

"I brought a code here for you to sign," replied Rodgers.

There were further expressions of amazement, punctuated by several well-chosen expletives, and the Division Administrator signed on the dotted line, saying, "No wonder you get things done."

Few of the leading operators throughout the country have not had the opportunity to meet Rodgers and be inspired by his electric personality. He can step into a meeting of gloomy truckmen, talk to them for an hour and send them home full of enthusiasm and "rarin' to go." Ted speaks with the cadence of a trip-hammer. He minces no words, and he makes sure that even the timid latecomers who hang around the exit of the room hear every syllable.

Once in a while he goes on dress parade; he reads a "canned" speech, which prompted the remark originated by himself that some folks might say he writes like a poet and talks like a truck driver. But the speeches that he talks are the ones that get over best.

At the recent Chicago convention, Ted explained that his father had always drilled him on the importance of playing fairly with his fellow men. Incidentally, the elder Rodgers is still going strong in his seventy-seventh year at his home in Coaldale. He takes great delight in his son's activities. He is a lover of fresh North Carolina tobacco and is kept in adequate supply by Bob Barnwell, an operator of Burlington, North Carolina.

In explaining that he was trying to follow the advice of his Dad, Ted said he had five other reasons for observing the golden rule. He referred to his five children. Then there's his wife, whom Ted affectionately calls "Mose." Her maiden name was Moser.

FEAR has been expressed by his many friends that the "human dynamo of the industry" was overtaxing his strength. He consulted a physician and was told to get eight hours' sleep every night. Ted has been trying to live up to the prescription, but he will not allow it to interfere with his business. The other day he decided to take a rest in Florida. No sooner had he reached his destination than he started on a series of meetings and forgot completely about the vacation. One of his friends remarked that Ted just does not know how to loaf.

He has no hobbies unless work can be considered a hobby. He is too busy to play golf. He is fond of retiring with his family to his summer home in the Pocono Mountains of Pennsylvania, 16 miles from Scranton, during the summer months. Duties at Washington, however, have interfered with that excepting for occasional trips on week-ends.

He is an ardent advocate of safety on the highway. He has talked to thousands of operators all over the country and has always emphasized the importance of improving the accident record of truck operators. He is a firm believer in the value of the code, yet does not allow that conviction to overshadow the necessity for permanent regulation of the industry.

The industry hails him as an able, fearless, fair, high-principled leader.

# Stewart

## announces

# NEW LOWER PRICED

# 2 ton truck $895

CHASSIS F. O. B. BUFFALO

A sensational truck at a surprisingly low price. No sacrifice of the usual STEWART quality. No compromise with the features that have long made STEWARTS famous for long life and economical operation. Compare it side by side with any other truck. You'll be convinced that it is "America's Greatest Truck Value" . . . honestly built, honestly rated, honestly priced. If you're looking for a truck that will stay on the road and out of the repair shop, see this newest STEWART value.

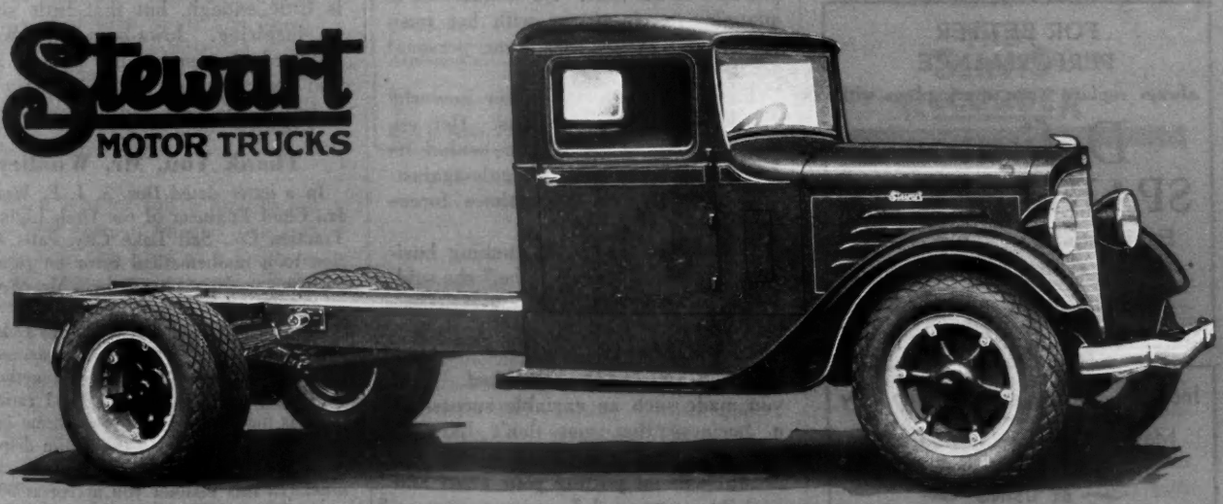
STEWART MOTOR CORPORATION
Buffalo - - - - New York

**MODELS**

| | | |
|---|---|---|
| 1 | Ton | 6 Cyl. |
| 1½ | Ton | 6 Cyl. |
| 2 | Ton | 6 Cyl. |
| 2½ | Ton | 6 Cyl. |
| 3 | Ton | 6 and 8 Cyl. |
| 3½ | Ton | 6 and 8 Cyl. |
| 3½-5 | Ton | 6 and 8 Cyl. |
| 5-6 | Ton | 6 Cyl. |
| 7-8 | Ton | 6 Cyl. |

Also see the New 2½-Ton at $695

Stewart MOTOR TRUCKS



**SPECIFICATIONS**

Wheelbase Lengths: 134", 145", 160", 176", 190". 6 Cylinder Motor. Removable bloc. Side mounted water pump. Steel valve inserts. Stromberg carburetor. Roller bearing universal joints. Ross roller mounted steering. Full floating rear axle. Helper springs. Hydraulic brakes. 6.50-20 heavy duty tires, dual rear, 7½" frame.

**Stewart Trucks Have Won—By Costing Less To Run**

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Every Demonstration
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**STOP THAT WASTE / from IDLING MOTORS**

MOTO-KOP *stops* the motor when the truck is idle. Positive, Tamper-proof. Pays for itself in 3 months in reduced gas and maintenance costs.

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Automatic Ignition Control
PATENT PENDING

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always replace worn spark plugs with
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Increase Shipping Floor Capacity
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You Have Now
BY USING
**"ROLOFF" DEMOUNTABLE BODIES**
ASK US HOW
**ROLOFF, INC.**
KENDALL SQUARE
CAMBRIDGE·MASS.


## She Stooped to Trucks and Conquered

(CONTINUED FROM PAGE 31)

But it wasn't so easy getting Mrs. Weaver to talk. This in spite of the fact that she seated herself at the long conference table, crossed her knees and settled herself as if preparing to answer inevitable questions. She did talk, of course, but she wouldn't say the things you wanted her to say. It seemed as if she knew what you were after and knew the right answer, but preferred to give you the one you didn't want, or else evaded it. She was liberal about the obvious details of her business.

"I operate nine trucks," she said, "and four trailers. I also have six tanks. These are used in road contracting work and oil field hauling. The trucks are of 1½, 2½ and 3-ton capacities. I have worked out an arrangement whereby the dump bodies and oil tanks are interchangeable."

THIS much more we managed to extract from her: She has been actively interested in the trucking business for 14 years. She has headed the Western Transportation Co. for the last four years, and they have been exhausting years, believe her. The company had a terrific indebtedness when she took over its management. She wiped out the debt in four years. But it meant so much hard work that it seemed like a burden for her to talk about it. She spends less than six months out of a year at home. Business takes her away the rest of the time. No wonder she is planning to do things with her business that will give her some personal leisure.

It was natural to ask her how she liked the trucking business. Her answer was startling because behind its truth lay the drama of struggle-against-odds that necessity sometimes forces on womankind.

"No woman is in the trucking business because she wants to be," she said, distinctly and with intense conviction. "She is in it simply because circumstances force her to be."

"Then why," she was asked, "have you made such an enviable success in a business that you don't like intensely? You couldn't have been successful without putting your heart and soul into your work."

Her simple answer revealed her character—enviable for its strength and admirable for its courage.

"I put my heart and soul into anything I do. I'd do the same if I were selling pots and pans."

And there you know all your reporter knows about Mrs. Weaver. It is little enough, but that little should be inspiring. Iowa-born and Wyoming-bred, that makes her pioneer stock and really belong to an industry that is full of pioneers and a pioneer itself.


THE NEW
**FORD V·8 TRUCK**
Gives you all these features
- Full-floating rear axle
- Special 80-horsepower V-8 Engine
- Heavy-duty Clutch
- Trouble-free 4-speed Transmission

No compromise with passenger car design.
A real truck...made of genuine truck parts

**FWD Trucks**
are available in sizes ranging in capacities from 1½ to 15 tons.
*Write for bulletin.*
The Four Wheel Drive Auto Co.
Clintonville, Wis.
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**DURABILITY**
YEAR after YEAR of ACTIVE SERVICE
Look over the record of any Marmon-Herrington all-wheel-drive truck that has been in service three years or more and you will learn what real durability and real stamina actually mean in a motor truck. All over the United States and all over the world, Marmon-Herrington vehicles are doing bigger jobs, hauling bigger payloads and giving a greater dollar's worth of trouble-free service. Marmon-Herrington Co., Inc., Indianapolis, Indiana.
MARMON-HERRINGTON
ALL-WHEEL DRIVE


### Thank You, Mr. Woolley

In a letter dated Dec. 5, J. F. Woolley, Jr., Chief Engineer of the Utah Light and Traction Co., Salt Lake City, calls attention to a mathematical error on page 29, column one, November issue. Mr. Woolley is right.

We quote from Mr. Woolley's letter, which gives all the correction necessary: "In the example illustrating the method of computing head cut for a 10-to-1 ratio the error is made of adding the volume in the combustion chamber to the piston displacement before dividing by R minus one or nine. In this manner you arrive at 30 c.c. as the inverted head volume required. This volume gives a ratio of only 8.5 to 1 as you will see by working it backwards.

"The correct formula is to divide the piston displacement by the (required ratio minus one) which gives the total volume of the combustion chamber as follows: 300 c.c. divided by (10 minus 1) equals 33.33 c.c.; 33.33 c.c. minus 10 c.c. equals 23.33 inverted head volume."

## General Baking Saves Dough With Synthetic Enamel

(CONTINUED FROM PAGE 19)

degrees for best results. When the primer is dry (about 24 hours) we spray on a mist color coat, then a final color coat.

On wood or paper-panel jobs we burn off the old paint with a gasoline torch, sand thoroughly, apply our red oxide primer as stated and let stand for 24 hours. We then spray three coats of surfacer and sand the surface the next day, after which the finishing coats are then applied.

The first is a mist coat, sprayed, of course. This coat is applied horizontally and the nozzle of the spray is held about 12 in. from the body. We do one side of the truck at a time. When the spray coat is applied on one side, we immediately go back and apply the second and finishing coat. This is applied vertically with the spray nozzle held about 6 in. from the surface of the body.

The less knifing and glazing done on these jobs, the better and longer the final finish will last. A synthetic job done in this manner has never yet failed and from the way the jobs are holding up, cracking and peeling is improbable.

It has never been considered necessary to use a primer or surfacer under a single coat job over the old finish. If the old surface is good, we simply touch-up the spots with red oxide primer, fill the cracks, holes and bruises with putty, and then apply the finish. If the job requires two finishing coats, the first is a mist coat and the second is one of regular consistency applied respectively horizontally and vertically as in the strip-down job.

THE third type of job is simply the touch-up and varnish finish. The fact that we can do this kind of a finish on an old job that has been out of the shop for about 20 months testifies to the quality of the finish and the way in which it is applied. In this case we spread a coat of ammonia over a small area of the body. The ammonia will loosen the clear synthetic without cutting the surface of the synthetic color. The ammonia is spread on and immediately scraped off with a razor blade or suitable instrument for that purpose. The old coat of clear synthetic comes off easily and cleanly.

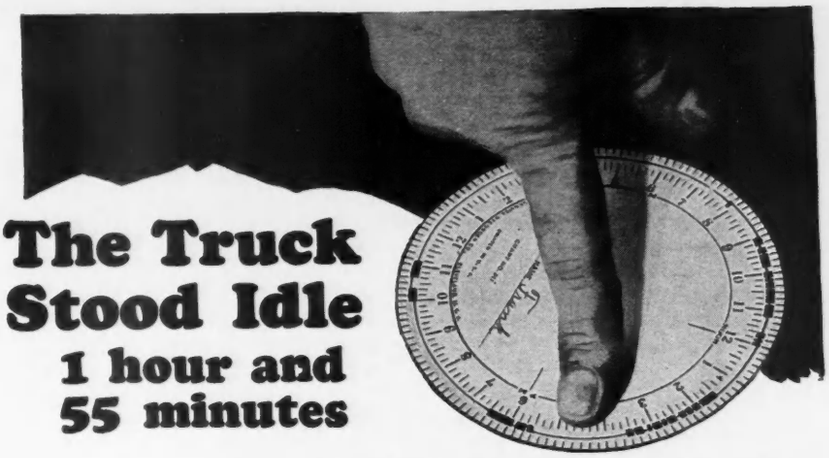
The surface is then rubbed down with wet number 240A sandpaper which I consider better than pumice as it leaves no grit. The job is then given a cold water wash, and a coat of clear synthetic is applied. Nicks and scratches are primed and puttied as previously explained.

Excellent, hard putty is mixed with dry white lead and an equal portion of Japan drier and rubbing varnish, and a small amount of Krackno. This putty dries hard and never cracks.

ALTHOUGH I am against knifing on a job, there are times when it is expedient to do such a job quickly on a tailgate. Then we use Krackno with enough dry white lead to make a paste to which is added a little turps. This glaze is knifed over a primed surface. Over this we apply the synthetic.

One special synthetic job which we did was finished over lacquer. This job was rubbed down with wet number 240A and rinsed. Over this we applied a mist coat horizontally, a regular coat vertically and one coat of clear synthetic. The job has held up beautifully to this day.

A tremendous saving is realized with synthetics. Under the old system with lead and oil paints by brush, a complete wagon job cost us about $98 and a complete truck job cost about $100. Today the wagon and truck jobs with synthetic enamel sprayed average about $50 each, or a saving of about 50 per cent. Varnish and touch-up jobs cost about $25 for the wagons and $35 for the trucks.

**The Truck Stood Idle 1 hour and 55 minutes**

***And You Can Put Your Finger Right On It!***

Now for the first time, perhaps, you feel that you are *really in control* of that truck!

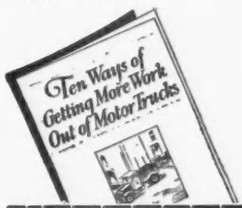
No more "hunches," no more suspicions, no more unfounded accusations, *no more arguments*—

Just quiet facts, which everybody respects—shown right on the chart.

We ask you, now isn't that the best way to manage motor trucks?

Send the coupon today.

**Write for it TODAY!**

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Please send us, without obligation "10 Ways of Getting More Work out of Motor Trucks."

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# PERFECTION
## THIRD AXLE UNITS

## Proven Economy
## CLINCHES YOUR SALE

Light duty trucks equipped with the Perfection "Super-Duty" Third Axle Units double the pay load capacity and increase the loading space. The initial cost and operating costs are far less than the cost of heavier trucks with equal carrying capacity and they are built for absolute safety and unusual flexibility. This economy, proved under varying conditions, is a sales clincher. Use it to sell your light duty truck prospects. Write now—get the full information.

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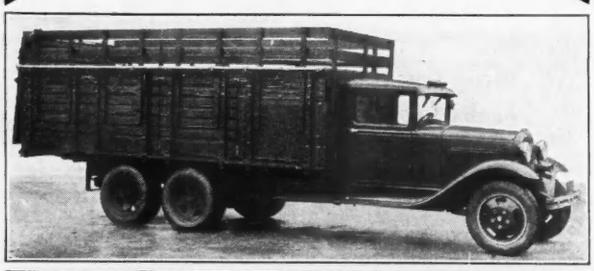

THE PERFECTION STEEL BODY CO.
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# IT IS POSSIBLE

1. To increase your travel distance and productive time by 5% to 15%, without increasing the rate of speed—*(that means a corresponding increased earning power).*
2. To overcome the most serious objection against trucks on the highway—*(a matter every fleet operator is concerned about).*
3. To remove the most common cause for motor accidents—*(an important and practical contribution to greater public safety on the highways).*

All this can be accomplished by spending less than the average price of one new fender.

A paying investment.

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K-D offers you a complete assortment of these items which are scientifically constructed for maximum efficiency and of sturdy construction. K-D products are designed by engineers who have spent years in the study of motor car lighting.

K-D has prepared for you a chart delineating the necessary clearance lamp and reflex signal installations as required by the various states. It is yours for the asking. Just send us your name and address.

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CINCINNATI OHIO

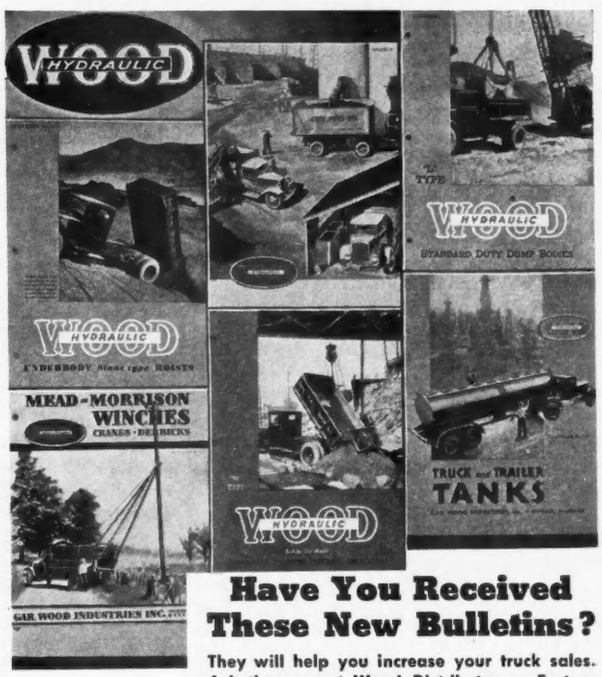
Torches

Clearance Lamps

Marker Lights

Truck Mirrors






## Have You Received These New Bulletins?

They will help you increase your truck sales. Ask the nearest Wood Distributor or Factory Branch for them.

Bulletin No. 2—Underbody Slant-Type Hoists; No. 3—Type "W" Heavy Duty Dump Bodies; No. 4—Type L Standard Duty Dump Bodies; No. 12—Garbage and Rubbish Collection Bodies; No. 14—Coal and Coke Bodies; No. T-1—Truck and Trailer Tanks; No. W-1—Mead-Morrison Winches, Cranes and Derricks.

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